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## THE DIAGNOSIS OF THE MORE COMMON HELMINTHIC INFESTATIONS OF MAN.

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### INTRODUCTION.

The subject of intestinal parasites has not always been sufficiently emphasized in our country, and as a result there is often a lack of knowledge of the prevalence of diseases caused by these parasites. It is quite true that, in the past, examinations for diagnosis of infections of this character were considered of value to physicians in tropical and subtropical countries; but now that, as Manson states, modern methods of travel have removed to a great extent the barrier to the spread of tropical diseases, no inconsiderable proportion of which are due to animal parasites, the need for such examinations is not restricted to such countries. In a country like the United States, with its varied telluric and climatic conditions, we undoubtedly have all the requirements favorable to the spread of certain parasitic infections. It is also likely that there have been endemic foci established within our borders, which will remain undetected until such time as the examination of feces becomes a routine practice in clinical diagnosis.

In this regard attention is called to the fact that out of approximately 8,500 deaths occurring among Chinese in the State of California, in not a single instance are diseases due to helminths or to protozoa mentioned either as the immediate or contributory cause of death, notwithstanding the fact that the bureau of communicable diseases of the California State Board of Health and certain physicians report the prevalence of hookworm disease in the gold mines of this State, and that Surgeon White (1903) of the United States Public Health Service in his investigations of plague in California in 1901 found at autopsy that a large number of Chinese were afflicted with clonorchiasis. In this latter connection there are two factors to be considered: First, that helminthic diseases do the greatest harm by being of long standing, their inroads favoring the introduction of intercurrent diseases; and second, that the Chinese in many instances employ their native practitioners, and not until shortly before death is a regular physician called, and then only to comply with legal requirements.

It may be contended that, owing to the absence of intermediate hosts adaptable to the complex developmental cycles of the Trematodes, the diseases caused by these worms are of academic interest only. Investigations show that in several instances there is a lack of specificity of intermediate hosts adaptable for the life cycles in species of the same genus, e. g., *Schistosoma hæmatobium* and *S. mansoni*; and also that *Fasciola hepatica* may have its life cycle completed with several different species of snails from different parts of the world, adaptable as intermediaries. Martinez has reported the larvæ of the *S. mansoni* consorting with those of the *F. hepatica* in the swampy regions of Porto Rico.

As to the prevalence of fluke diseases, they are not found to be as widespread as hookworm disease even in those parts of the world where they are known to be endemic, the foci being more or less isolated. For example, in Porto Rico, with all conditions favorable, the percentage of infection by *S. mansoni* in the rural districts, which are the known endemic areas, has reached only 7.8 per cent. In China, *S. japonicum* is prevalent in the valley of the Yangtze and its tributaries, and practically absent in the Canton districts; while in Japan there are certain localities only where schistosomiasis is endemic. As there are no restrictions to travel, it is undoubtedly true that there are many carriers roaming about that country without producing new endemic foci. This is pertinent when it is considered that the environment and especially the food habits are distinctly oriental.

The purpose of this paper is to present the clinical side of parasitology as it relates to the more common helminths infesting man (special attention being given to the identification of their ova found in the sputum or feces), with but slight reference to the zoological features of the parasites; also to call attention to some of the exceptions that have been noted in reference to clinical manifestations. For a complete description of the diseases caused by parasitic worms, the reader is referred to standard text books on the subject.

The series of cases on which this article is based were, so to speak, culls which were previously inspected and accepted by the examining physicians at the foreign ports of embarkation; therefore the report will not be of statistical value in estimating the prevalence of this class of diseases in a particular region. In many instances of the series there were, practically speaking, no clinical manifestations, due either to the lightness of the infection or to an immunity acquired or inherited by the progeny of a thoroughly parasitized ancestry. Past histories, subjective symptoms, etc., were not obtainable, because of the fear on the part of the aliens that information given by them in reference to previous diseases would be prejudicial to their entry into the United States.

## LABORATORY TECHNIQUE OF FECAL EXAMINATION.

The centrifuge method has been found to be one of the best for the preparation of the specimens of feces for microscopical examination, since it makes possible not only the detection of the ova of hookworm but also those of other parasites which may find their way into the lumen of the intestines. The technique is rapid and the percentage of error small; and where many examinations are to be made, the method used for collecting specimens prevents the possibility of mixing the specimen from one individual with that of another. The collecting of samples is carried out by the use of ordinary washbasins (plain, tinned iron) numbered consecutively. The number is placed on the inside with asphaltum varnish, which stands hot water fairly well. In addition it is necessary to have a centrifuge tube with a corresponding number for each pan. When the individual brings the specimen to the laboratory, he is given a tag on which is marked the number of his pan, which serves to identify the specimens later on.

The specimen is prepared for microscopic examination as follows:

1. A piece of (preferably) formed stool, approximately the size of a walnut, is placed in a porcelain cup, and after taking about 60 cc. of *cold* water, the mass is thoroughly disintegrated with the aid of a wooden tongue depressor. When disintegration of the feces is as complete as possible, the tongue depressor is destroyed. If the stool is liquid, an equal bulk of cold water is added and mixed as indicated above.

2. After placing over the mouth of the cup 2 or 3 layers of wide-mesh surgical gauze, a portion of the contents of the cup is strained into a tube and centrifugalized for 10 seconds at 1,500 to 2,000 r. p. m. The gauze is thrown away and a new piece used for the next specimen. The cup is emptied of its remaining contents and thoroughly scalded.

3. The tube is removed from the centrifuge, and, without disturbing the sediment, the supernatant liquid is poured off and the tube refilled with cold water to about  $\frac{3}{4}$  its capacity.

4. A thoroughly clean rubber pad is placed over the mouth of the tube and held in place by the thumb while the tube is shaken vigorously. When preparing two tubes at the same time, extreme care should be taken to use the rubber pads on their respective tubes at each shaking.

5. The contents are again centrifugalized for 10 seconds.

6. The supernatant fluid is poured off as described above, the tube is refilled with cold water and again shaken.

7. Centrifugalized again for 10 seconds.

8. The supernatant fluid is poured off, leaving about  $\frac{1}{2}$  inch overlying the undisturbed sediment. The specimen is now ready for microscopic examination.

9. A small amount of the sediment is placed on a slide, and sufficient water is added to almost completely cover it. This is mixed with the aid of a toothpick or match and allowed to stand for 2 or 3 minutes; the excess fluid is poured off onto another slide, more water is added and this is allowed to stand while the first slide is being examined microscopically.

This procedure can be repeated with a third slide, though usually the second will suffice. It often happens that ova will be found on the second slide and not on the first, on account of the lower density of the former, which permits the ova to settle more readily.

Material from formed stools gives the best chance for success, especially when portions from the outside of the scybalum are used in searching for the eggs of the Schistosomes. The bringing about of an intestinal stasis with *tr. opii* is advisable if it is otherwise impossible to obtain a formed stool. The feces from a meat diet give the best results. The chances of finding ova are greatly increased if the feces are compact, since the quantity is greater by volume in proportion to the bulk of the eggs when the feces are semifluid.

After taking into consideration the many conditions that may arise within the intestines from the time of oviposition until the eggs of the parasites appear in the feces, success in the detection of eggs can hardly be expected to reach 100 per cent. This is notably true when, as in our work, there is only one opportunity for examination, since in mild infestations and in the absence of physical signs or other tangible reasons, the holding of large numbers of individuals for extended observation would not be practicable nor justifiable.

Eggs that enter the lumen of the intestines while the contents are still semifluid will be more evenly distributed, while those entering the gut after the feces have become more compact will have an irregular distribution. An example of this is the case of the Schistosomes, eggs of which enter directly from the wall of the intestines and are often found in abundance on the outside of the scybala.

Occasionally deceptions are practiced by individuals coming up for examination, the most common one being to substitute materials. Another practice is to ingest large quantities of fats or oil, which keep the bowels loose and prevent the eggs from settling to the bottom of the tube during centrifugation. In such cases the ova are poured off during the preparation of the specimen and are lost.

Other methods for the preparation of feces have been reported, the principle of which is to float the eggs by increasing the density of the fluid used. Solutions of sodium chloride, glycerine, magnesium sulphate, and calcium chloride are recommended for this purpose.



The technique consists of breaking up a portion of the feces in either of the solutions and allowing the suspension to stand for a short time to permit the eggs to come to the surface, when the supernatant fluid is poured off through two or three layers of wide-mesh gauze into a test tube. After the tube has stood for some time, the eggs will be found floating on the surface of the fluid, where they may be looped off with a wire loop and placed on a slide. (The centrifuge is omitted.) This method gives excellent results as far as the ova of the hookworm are concerned, but not with those of the Trematodes, which will be found at the bottom of the tube.<sup>1</sup>

The advantage as regards the finding of hookworm ova only may be as great as 10 per cent in favor of the flotation method over the centrifuge method; but with care in preparing the specimens, and a careful searching of the slides, the failures will be kept within negligible limits.

One of the most exact methods for detecting hookworm infection is by incubating equal parts of the suspected feces and bone charcoal. At the end of 72 hours the larvæ will be sufficiently developed to be seen with an ordinary reading glass. (It is necessary that the larvæ be differentiated from those of the *Strongyloides stercoralis* and those of free-living water and earth Nematodes.) The process is too slow where time is a consideration, on account of the required period of incubation. The smear method is susceptible of too much error in case of light infections—in fact, any method that does not provide for concentration is of doubtful value in light infections—with the exception that in schistosomiasis it may give quick results in detecting the ova in the blood-streaked mucus. Experience has shown that clinical methods are inferior to fecal examinations in determining helminthic infections, especially in light infections and those that are tending to a spontaneous cure after the removal of the individual from an endemic area.

Occasionally ova may be found, the description of which it will be impossible to find in the literature. This is not surprising when we remember that there are as yet many unclassified parasites (and also known forms whose normal hosts are the lower animals) which may infect man incidentally.<sup>2</sup> We should, however, be somewhat conservative in considering parasites as "incidental"; further investigation may prove man to be their normal host.

<sup>1</sup> The flotation method was demonstrated by the writer to be inadaptable in dealing with the eggs of the *Clonorchis sinensis*. Mr. James D. McDonald of the Bureau of Communicable Diseases, California State Board of Health, has conducted extensive experiments along this line, a report of which is now in the hands of the publishers.

<sup>2</sup> Eggs of the free-living water and earth Nematodes are often deposited on green vegetables that are eaten uncooked. The eggs appear in the feces, their presence ceasing a short time after this particular diet is discontinued. These eggs present the usual characteristics of those of the Nematodes, being of larger size than those of similar parasites of the human.

### III. CERTAIN CLINICAL OBSERVATIONS.

The clinical courses of diseases due to parasitic worms are not unlike conditions of a different etiology with which we are familiar in this country. There are, however, instances of infection by the Schistosomes in which there will be intervals when no egg will enter the lumen of the intestines; in such cases the presence of an eosinophilia should attract attention, even though it is not always a trustworthy sign as far as infection by animal parasites is concerned, since an eosinophilia is present in some cases and absent in others. Generally speaking, I am led to the conclusion that while the various clinical symptoms and signs usually attributed to helminthic infestations may be present in endemic areas where aggravated cases are met with, many exceptions will be found, especially as stated above, in light infections.

Indications of anemia, especially in hookworm infections, were often present, though in not a few instances there were no marked indications of the condition. In infections by the *Dibothriocephalus latus*, anemia was constant, examination of the blood showing a decided decrease in hemoglobin in both children and adults. As this parasite is not of the blood-sucking variety, the anemia is probably due to the absorption of toxic substances that have been liberated by the worm.

The number of round worms that may be harbored by a young child is almost incredible. In many instances there were no outward signs suggesting the presence of the parasites, and our attention was often attracted to the condition by the child's having vomited a few worms. From the bulk of worms that may be expelled, one would wonder that there was sufficient unoccupied lumen for the aliments.

There came under observation a case of polyparasitism which harbored the following organisms: *Ancylostoma duodenale*, *Trichostrongylus orientalis*, *Paragonimus ringeri*, *Trichuris trichiura*, and *Ascaris lumbricoides*. The eosinophile count was 6 per cent. In another individual in which the *P. ringeri* did not participate, and in which *Fasciolopsis buski* completed the ensemble, the case presented an eosinophilia of 10 per cent. The individual showed excellent physical development, which indicated that parasitic infestations are not always concomitant with poor physique. Aggregations of this sort are quite frequently met with.

In infection by the blood- and liver-flukes, the number of ova present may seem to indicate a heavy infestation, though a careful physical examination of the individual may fail to reveal structural changes.

Helminthic infections may, in some instances, go on to a fatal termination without their true etiology being recognized; the clinician

is unable to determine their existence, because of the erratic migration of the parasites or of secondary localization which may produce symptoms in areas other than those of their usual habitat. The existence of the parasites in these cases would have been ascertained by the finding of a proglottis of the worm or its ova in the feces.

Some worms that were formerly thought to be deleterious only by their mechanical action have been shown by recent investigations to be capable of either liberating toxic substances or, by the erratic migrations of the adult parasite or their embryos, of producing tissue changes of grave import. In this respect attention is called particularly to the results of the recent investigations concerning the life history of the *Ascaris lumbricoides*, which show that the embryos of the good-natured "stomach worm" of a few years ago were capable of invading the lungs.<sup>3</sup>

#### IV. CONSIDERATION OF THE VARIOUS OVA.

Before taking up the consideration of the various ova, it may be well to state that too much reliance should not be placed on measurements which are by no means specific. They are subject to variations in some instances in the age of the materials containing them. The various sizes reported by different observers also depend on whether or not preservatives were used. The sizes given below are of the eggs as they appear in fresh materials, being prepared for examination without the use of a cover glass.

The sizes of the eggs of animal parasites of the same species are subject to the same variations as those of other ovipara; therefore the sizes stated are only approximate. Nevertheless they are sufficiently accurate for differentiation, which will enable us to place a doubtful ovum within a small group of possibilities. But when there are two eggs of nearly the same size, or with dimensions stated that overlap, and with other characteristics similar, it will be difficult, if not impossible, to make a correct differentiation by the dimensions of the eggs.

##### Trematoda.

The eggs of the Trematodes present thick shells, some being double contoured. The contents, which consist of yolk cells and the developing embryo, always completely fill the shells. The color of the eggs ranges from a pale yellow to a dark green. With the exception of those of the Schistosomes, the eggs are operculated.

*Schistosoma japonicum*.—Infection by *S. japonicum* was found mostly in Japanese. The ova are of a straw or light greenish-yellow color, and ovoid in shape. There have been various sizes stated. Undoubtedly some sizes refer to the eggs expressed from

<sup>3</sup> Ransom and Foster (1) state that infection by this worm should be considered when dealing with pulmonary affections in children.

the uterus of the parasite or those which may reach the lumen of the intestines shortly after oviposition or those found in the feces of lower animals. We are concerned here only with their appearance as they are usually found in the human feces.

After making many measurements, the eggs were found to be 0.090 to 0.101 mm. long by 0.056 to 0.074 mm. broad, the average dimensions being 0.100 by 0.070 mm. The shell is somewhat thick and smooth, and usually has vegetable matter adhering to it. Frequently the eggs are seen completely surrounded by detritus, resembling in some respects the eggs of the round worm with their albuminous covering. It appears that the surface of the shells have adhesive qualities, so that the material adhering to the eggs will often obscure the outline of the shell to such an extent that the eggs may be overlooked. It is therefore necessary to search carefully, keeping on the lookout for the outlines of a miracidium. I have not observed spines, rudimentary or otherwise, on the shells.

As a general rule the eggs contain a developing miracidium, which will often be seen in motion. Ova that have been expressed from the uterus or those that have been recently deposited in the tissues may resemble the eggs of the hookworm; but while wandering through the tissues they become further developed, so that when they appear in the feces containing a miracidium, this resemblance is completely lost. If a cover glass is placed over the egg and pressure is applied, the shell will be ruptured, permitting the escape of the embryo, which may then be seen outside the empty shell, either remaining stationary or swimming around the field. This is a conclusive test. Occasionally miracidia of the *S. japonicum* will be observed swimming about before the ova are found. The cilia of the miracidium are visible with a high-power objective. It has been stated that the miracidium will escape in about 10 minutes after coming in contact with water. In a series of tubes the sediment was allowed to stand covered with plain water for 48 hours (examination was made at intervals), at the end of which time there were many unruptured eggs to be seen. It was found almost impossible, however, to place a cover glass without causing dehiscence, although at an earlier period they would stand more manipulating. This experiment was made to determine the effect, if any, that the technique of the examination would have on the eggs. The eggs may appear abundant at one time and absent at another. The histopathology of the disease explains this fact.

As before stated, the only other egg with which it might be confounded is that of the *A. lumbricoides*; but when it has once been seen, there will be little likelihood of a mistake. The ova of the *S. japonicum* are often found in feces, where, to the naked eye, there is no sign of blood-streaked mucus. Material will sometimes be found in which it is difficult or impossible by centrifuging to

get a compact sediment in the tube, because of an excess of mucus. Such material should be treated with suspicion and should be again centrifuged after treatment with equal parts of antiformin and water.

The finding of the ova of the Schistosomidae may be facilitated either by constipation or a looseness of the bowels.<sup>4</sup> The intestinal wall being infiltrated with ova of the Schistosomes, the inflammatory reaction may favor the rupturing, into the lumen, of a pocket containing the eggs. A constipated condition may also favor the finding of the eggs by mechanical irritation, especially after the scybala become formed.

Infections by this parasite are not confined to males, but are also quite frequently found in females.

*S. mansoni*.—The ova of *S. mansoni*, owing to their size and the possession of a very characteristic lateral spine, may be readily recognized. They measure 0.112 to 0.173 mm. in length by 0.055 to 0.102 mm. in breadth. Of the many examinations of individuals from the Orient I have not found a case of infection due to the *S. mansoni*. I have found infections only in persons from the West Indies. In the cases observed, the parasites seemed to produce no symptoms other than a rectocolitis, accompanied by constipation. There was a low eosinophile count.

*Paragonimus ringeri*.—The eggs of *P. ringeri* when found in the feces are of a reddish-brown color, while those that are obtained directly from the sputum have a more golden appearance. They are ovoid in shape, measuring approximately 0.060 to 0.100 mm. in length by 0.038 to 0.070 mm. in width. They have a thick shell, one end of which appears to be flattened. On focusing, an operculum will be made out which may be likened in appearance to a clown's cap, having a sharp-pointed crown with upturned brim. The shell contains the ovicell and the yolk cells.

These eggs are often found in the feces. It may be that they have been coughed up from the lungs and then swallowed. I am of the opinion that this fluke inhabits other organs to a greater extent than was formerly believed, since several of the cases under my observation have presented moderate hepatic and splenic enlargement, and the eggs were found in abundance in the feces. If, after finding the eggs in the feces, a specimen of the sputum be obtained and spread on a slide without fixing or staining, the ova will be found by low power magnification. Percussion of the thorax will show a dullness of a more or less diffuse character. There may be no rise of temperature, and from the general appearance of the individual there may be nothing suggestive of pulmonary involvement. If the sputa of persons from endemic areas, especially those cases presenting the

<sup>4</sup>In agreement with Martinez (2) that some cathartics will provoke a dysenteric outbreak of bilharzian rectocolitis, accompanied by abundant discharge of mucus heavily laden with eggs, I am also of the opinion that the use of podophyllin, as recommended by Neuman, to set up a slight inflammation of the mucosa in the treatment of hookworm would be advantageous.



symptoms of bronchial involvement, were examined more as a routine, the ova of the *Paragonimus ringeri* would be oftener found.

A retraction of either or both supraclavicular spaces may indicate infection by this parasite, though the individual be of robust build. Careful digital percussion will reveal impaired resonance. Auscultatory percussion by continuous vibration brings out readily the change in density.

The disease caused by this parasite is referred to as endemic hemoptysis, from which designation one would expect to find hemorrhage or blood-streaked sputum. An aggravated case would not be likely to come under my observation. In the series of cases observed, the evidence or indications of hemorrhage were so slight that they would probably have been overlooked if suspicions had not been aroused by finding the eggs of the parasite in the feces.

On inspection, the sputum was found to be of a light grayish-brown color. It would be necessary to resort to a stretch of the imagination to associate it with blood pigment. The color might be attributed to the use of tobacco.

*Clonorchis sinensis*.—There are five flukes of clinical interest that inhabit the bile channels, viz, *Clonorchis sinensis*, *Clonorchis endemicus*, *Opisthorchis felinus*, *Fasciola hepatica*, and *Dicrocoelium lanceatum*. It is by no means certain that the first two are not identical. Their eggs and the eggs of the third so closely resemble each other that it is difficult if not impossible to distinguish between them. This fact from a strictly clinical standpoint is of no moment, as the three parasites are of the same pathological import. There are, however, two forms, viz, *Heterophyes heterophyes* and *Metagonimus yokogawai*, inhabiting the intestines, whose eggs may be mistaken for those of the pathogenic forms, though as far as known they are benign (if such a designation is permissible in reference to any intestinal worm).

The following table shows the size limits of the eggs of the flukes under discussion as reported by other writers. These measurements correspond with the experience of the writer. In this table have also been included the measurements of the eggs of *Trichuris trichiura*, since they are commonly found and so well known, in order that a mental picture may be constructed by comparison, giving an idea of what to expect when searching for the eggs of these flukes.

	Length.	Width.
	Mm.	Mm.
<i>C. sinensis</i> .....	0.026-0.030	0.015-0.017
<i>C. endemicus</i> .....	0.026	0.013-0.016
<i>O. felinus</i> .....	0.030	0.011
<i>M. yokogawai</i> .....	0.026-0.030	0.015-0.018
<i>H. heterophyes</i> .....	0.030	0.017
<i>D. lanceatum</i> .....	0.038-0.045	0.022-0.032
<i>T. trichiura</i> .....	0.050-0.064	0.023

From the above table it will be observed that the measurements of these various ova in this particular instance are not reliable guides to aid in their identification.

The eggs of the above mentioned flukes are of a light yellow color, with the exception of those of *Dicrocoelium lanceatum*, which may in old materials exhibit a brownish color. All have thick shells, within which may be seen a miracidium.

The eggs of *C. sinensis*, *C. endemicus*, and *O. felineus* are either ovoid or pear-shaped, or resemble a vase with an elongated neck. In either case the projecting brim of the operculum is of greater diameter than the superimposed lid. A high-power (dry) magnification is necessary to bring out this characteristic which makes it possible to distinguish conclusively the pathogenic group from the other forms. Eggs of the pathogenic forms may be seen without this feature being clearly defined. There will, however, always be present in the same specimen, eggs that are typical. A hooklike projection is quite commonly seen on the nonoperculated pole of the eggs of *C. sinensis*, although more often it presents the appearance of a rounded knob rather than a hook.

The eggs of *H. heterophyes* and *M. yokogawai* are more uniformly oval, the position of the operculum being indicated in recent specimens by a faint line which does not change the ovoid contour of the ovum. They are smaller than the eggs of the *D. lanceatum*.

As a rule the eggs of *C. sinensis* are quite plentiful, although light infections are sometimes met with which require careful searching, especially since the ova resemble in color and size other objects (fat).

Diatom frustules are sometimes seen, the superficial appearance of which is not unlike the eggs of the smaller flukes.

*Fasciolopsis buski*.—The eggs of this fluke are of a greenish-yellow color, measuring 0.130 to 0.140 mm. in length by 0.070 to 0.090 mm. in width. In recent specimens the shell is thin and smooth, inclosing an ovicell and yolk cells. As the food cells are consumed by the developing embryo, in older specimens the shell loses its smooth outline, becoming more or less ragged. The eggs are operculated, but this is not readily seen in fresh specimens unless a cover glass is used. The eggs are among the largest found in the feces.

The possibility of mistaking the eggs of the *Fasciola hepatica*, a pathogenic form, for those of the *F. buski* should be borne in mind. The former are slightly larger and more uniformly ovoid than the latter. The infection of man by *F. hepatica* is very rare; only about twenty cases have ever been reported. The *F. buski* may be readily recovered by the administration of thymol or male fern. It is not considered of pathological importance and has been found by the writer only in Chinese.

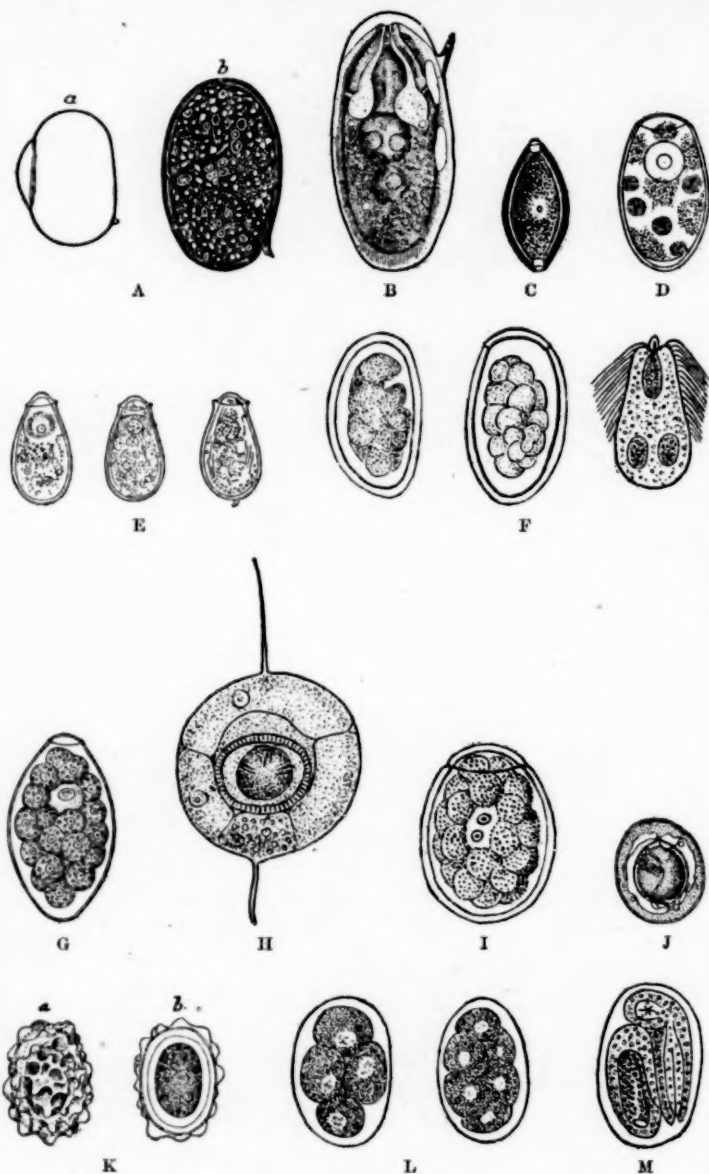


FIG. 1.—Eggs of parasitic worms, not drawn to scale. (After various authors.)

A. *Schistosoma japonicum*.  
a. External view.  
b. Median plane view.

B. *Schistosoma mansoni*.

C. *Trichuris trichiura*.

D. *Paragonimus ringeri*.

E. *Opisthorchis sinensis*. In different stages of development as found in the uterus.

F. *Dicrocoelium lanceatum*.

G. *Fasciolopsis buski*.

H. *Tania saginata*.

I. *Dibothriocephalus latus*.

J. *Hymenolepis nana*.

K. *Ascaris lumbricoidea*.

a. External view.

b. Median plane view.

L. *Ancylostoma duodenale*.

M. *Strongyloides stercoralis*.

Fig. 1.

## Cestodes.

*Tænia solium* and *Tænia saginata*.—Owing to the close resemblance between them, the ova of *T. solium* and *T. saginata* will be considered together. The embryophores surrounding the onchosphere are globular, of a brown color, and measure approximately 0.035 mm. in diameter. Those of *T. saginata* are slightly larger and are thick and striated, and the outer yolk shell is of a pale color. Within the onchosphere will be observed three pairs of hooklets, differentiating the ovum from that of the *Trichiuris trichura* when the latter is seen standing on end.

Eggs without the outer yolk covering are more often found. The stage of development accounts for the fact that the eggs of the two parasites appear in two forms: those with the outer yolk covering have been prematurely expressed from the uterus by pressure within the intestines, or in passing through the anal ring, while eggs without the outer yolk covering are further developed.

Although there are some differences in the appearance of the two eggs, it is doubtful even if the most experienced of us would feel justified in resting a decision differentiating the species of the parasite solely on this evidence. When proglottides are obtained it is easy to distinguish between the two species, since the number of lateral uterine branches is greater in *T. saginata* than in *T. solium*.

It is necessary that the species of the tapeworm be determined, owing to the dangers of cysticerci infection in event that the worm is *T. solium*. Such infection may take place either internally by a proglottis finding its way from the intestines into the stomach, or by the eating of contaminated food whereby the onchospheres are introduced into the mouth. It is said that this danger does not exist in infections by the *T. saginata*; nevertheless cases of cysticerci infection have been reported in which this worm has been indicted.

*Dibothriocephalus latus*.—The eggs of *D. latus* are of a dark green color, ovoid in shape, and measure approximately 0.070 mm. in length by 0.045 mm. in breadth. The shells are thick, smooth, and operculated. This latter characteristic can not always be seen in fresh specimens, but as the eggs become older, especially if they are kept in water at room temperature, it will become apparent. By placing on a cover glass and pressing the egg, the operculum will often be seen to open up after the fashion of a hinged lid. The shells are packed with yolk cells, and in some recent specimens a large ovarian cell has occasionally been seen.

The ova are usually found in abundance; they are normally oviposited within the intestines. The proglottides are also found in the feces. As a matter of fact we shall, in a great many cases of

infection by the larger tapeworms, be anticipated in making a diagnosis, by the patient's announcement of the discovery of a "link."

The eggs of *D. latus* may be mistaken for those of the *S. japonicum*; they can be distinguished, however, by the fact that the shell of the former is filled with yolk cells, while that of the latter contains a well-defined miracidium. Ova of *P. ringeri* may also cause confusion. Infertile eggs of the *A. lumbricoides*, having a slight albuminous covering, are more likely to lead to error. By deferring the examination for 24 hours the operculum of the *D. latus* will become apparent, thereby definitely establishing the identity.

Anemia is constant in infection by this animal, due no doubt to toxins liberated and to the long life that is accredited to the worm. The infections are usually multiple, which may also be a factor. Koreans, Russians, and Japanese are found infected in the order given.

*Hymenolepis nana*, *Hymenolepis diminuta*, and *Dipylidium caninum*.—The eggs of these tapeworms are, on superficial examination, quite similar in general appearance. There are, however, differences which may be noticed on a closer study.

The egg of *H. nana* is very small compared with that of the other tapeworms. The proglottides are easily overlooked, especially those of the first two mentioned. The proglottides of the dog tapeworm, *D. caninum*, would usually attract attention.

Of the three tapeworms, infection by *H. nana* is the most common. Therefore, since the pathological significance of the three worms is the same for all practical purposes, we may disregard the eggs of *H. diminuta* and those of *D. caninum*.

Figure 1(j) shows an egg of *H. nana*. The inner membrane or shell surrounding the onchosphere is seen to have two mamillate projections, one at each pole, with long filaments attached. Hooklets are to be seen with the onchosphere. This characteristic and the fact that it is smaller will differentiate the ovum of *H. nana* from that of *H. diminuta*. The eggs of *D. caninum* are smaller than those of *H. nana*, and found in the stools, in pockets. The characteristic melon-shaped proglottis, which may be readily obtained, is the more accurate means of determining the species.

#### Nematoda.

The eggs of the Nematodes are not operculated and, with few exceptions, have smooth, thin shells.

The fertilized eggs of the Nematodes contain blastomeres or, in the later stages of development, a coiled embryo. The infertile eggs may contain a fine granular substance, having in some instances highly refractile granules distributed throughout the fine granular mass.



Eggs of the Nematodes recently oviposited always have a clear area between the blastomeres and the shells. This disappears as development progresses. The eggs of *T. trichiura* may appear as an exception to the general run of this class of eggs; but if we could see these eggs earlier, the characteristics would be present. By keeping the ova in a warm place, opportunity will be had to observe the various changes that occur.

Ova of "incidental" parasites are occasionally met with, presenting all the characteristics of the Nematode eggs. It is quite possible that they belong to the group of Trichostrongylidæ infesting the lower animals.

Eggs of the Acarina, which, to a considerable extent, resemble those of the Nematodes, are occasionally found; they are, however, larger, and contain a granular vitellus. The mites also may be found in the feces.

*Ascaris lumbricoides*.—The ova of *A. lumbricoides* present different characteristics, depending on whether they are fertilized or not, and whether or not decortication of the albuminous covering has taken place. The normal eggs are of a dark-brown color and are ovoid in shape, though occasionally nearly spherical. In recent specimens the contents of the shell consist of a single cell. As the specimens become older no yolk cells are present and segmentation takes place until finally a coiled embryo is seen.

Unfertilized eggs are longer than those that are fertilized, and when the albuminous covering is slight they may be mistaken for the eggs of other species, especially those of the *D. latus*. The presence of an operculum will distinguish the latter.

Decorticated eggs may be mistaken for the eggs of the hookworms, but the smooth, thick, chitinous capsules should prevent error. Also the ovum of *Ascaris* is always in the one-celled stage, while the hookworm egg contains four to eight blastomeres.

*A. lumbricoides* is the most common species of the family Ascaridæ found in the human being, forming with the *A. duodenale* and the *T. trichiura* the most prevalent combination of parasites met with in Orientals; they are seldom found singly in untreated cases.

*Trichuris trichiura*.—The eggs of *T. trichiura* are barrel-shaped, with a thick, brown shell which is perforated at the poles, each opening being closed by a light-colored plug. They measure 0.054 by 0.023 mm. The ovum of *Eustrongylus gigas* resembles slightly those of the whipworm; however, the depressions in the shell of the former, its larger size, and the fact that it is found in the urine, will prevent the eggs from being confounded with those of *T. trichiura*.

*Ancylostoma duodenale* and *Necator americanus*.—There is no clinical advantage in differentiating *A. duodenale* from *N. americanus*. The eggs resemble each other very closely, and it is doubtful if it is

practicable to distinguish one from the other. It is, however, an easy matter to recover the adult parasites and to determine the species from their anatomical characteristics.

The eggs of both parasites are of a grayish color, have a thin shell, the contents of which do not completely fill the shell, and they present a segmented appearance.

The eggs of *A. duodenale* measure 0.056 to 0.061 mm. in length by from 0.034 to 0.038 mm. in width, while those of *N. americanus* are 0.057 to 0.072 mm. long by 0.036 mm. wide. As will be seen, the measurements overlap, therefore they will be of little value in determining the identity of either egg. It is stated that the ends of the eggs of *A. duodenale* are broadly rounded and that those of *N. americanus* taper toward each pole.

Infertile eggs of the hookworm are sometimes seen, the shells of which contain a yellowish granular material. The only eggs that are likely to be confounded with the eggs of the hookworms are those of the *Trichostrongylus orientalis* a parasite having no pathological significance, and the decorticated eggs of *A. lumbricoides*.

*Trichostrongylus orientalis*.—The shells of the eggs of *T. orientalis* are somewhat plano-convex, with a tendency to be pointed at one pole. They measure 0.072 to 0.080 mm. in length by 0.045 mm. in breadth, which makes it possible by comparative measurements to distinguish them from hookworm eggs.

This parasite may be present in hookworm infections—an important fact to be remembered, inasmuch as it is possible to eradicate the hookworms but difficult, if not impossible, to remove *T. orientalis*. In this case there will be ova appearing in the feces, closely resembling those of the hookworms, which may lead to the belief that infection by the latter is still present. These ova have been found in Japanese and Koreans.

*Oxyuris vermicularis*.—The eggs of *O. vermicularis* are not likely to be mistaken for those of others, since they are smaller than any other ova approximating their description.

The eggs are double contoured and measure 0.054 by 0.025 mm., about the same as the eggs of the *T. trichiura*. They usually contain a coiled embryo. The shells are thin.

The adult parasites are readily recognized in the feces by the naked eye, and the method of looking for them in the feces is a more rapid and accurate one of detecting their presence than that of searching the feces for their ova.

*Strongyloides stercoralis*.—The eggs of *S. stercoralis* are seldom found in the feces unless under-developed, infertile, or during purgation, when their ova are evacuated with the feces before the rhabditiform larvæ have been liberated from the shells within the intestines—a normal event. It is doubtful if the embryos would be retained

within the shells during the agitation incident to the preparation of specimens for centrifugalization.

Under usual conditions in infection by these parasites their actively motile rhabditiform larvæ will be readily observed with low-power magnification; the only other motile embryos that are likely to be recognized by low-power magnification are those of *S. japonicum* and *S. mansoni*, which, however, are not rhabditiform.

The active motile embryos of *Tricinella spiralis* may be seen in the feces during the diarrheal stage by using a higher optical combination.

Occasionally in the feces of Chinese from Canton, eggs are found having the characteristics of those of a Nematode. The shells are thin, inclosing a granular nucleus of a greenish-yellow color. They are in all probability the eggs of the *Nemotodirus gibsoni*.

Vegetable cells and cryptogam spores derived from the food may be mistaken for the eggs of parasites, since they frequently appear in the feces. As is to be expected, many forms will be met with, owing to the various foods of the different races; therefore it would be impossible to give anything like a complete description of them. There are, however, forms that appear in the feces of orientals with such regularity that it is advisable to give a short description of them.

More commonly are found spores of a dark-brown color, having a coarse mosaic arrangement of the outer surface, resembling in appearance the marking of a turtle's shell. They are about the size of the round-worm eggs. This appearance of the shell may cause the spore to be mistaken for the egg of the *Eustrongylus gigas*, which is also brown and has oval depressions, but which has clear areas at each pole. The size of the latter and the fact that it is found only in the urine will serve for differentiating.

There is another common variety of spores of brown color which seems to be folded upon itself after the fashion of a "turnover" biscuit.

Diatomaceæ of both the fresh and salt water varieties are occasionally to be seen. *Stauroneis phænicenteron* is quite common, also *Coscinodiscus*. The former is of a lanceolate form with transverse markings, and has an irregularly shaped nucleus centrally placed. The latter is circular in outline and presents a precise tessellated arrangement of its interior, which causes the frustule to appear similar to a cross section. Both forms are either pale yellow or colorless.

Starch cells are commonly found. They are colorless and translucent without regularity in outline or size. One with a fairly smooth outline might be mistaken for the degenerated egg of the hookworm, the shell contents being granular. The absence of a thin, smooth

shell with a clear area between the shell and its contents should clear up the doubt. A drop of dilute Lugol's solution added to the slide will definitely settle the question.

#### REFERENCES.

- (1) Ransom and Foster: *Journal of Parasitology*, March, 1919, vol. V, pp. 93-99.
- (2) Martinez: *Transactions American Society of Tropical Medicine*, 1916, pp. 97-139.

#### THE REGULATION OF BIOLOGICAL PRODUCTS IN ENGLAND.

The Minister of Health of England has recently appointed a committee to consider and advise upon legislative and administrative measures to be taken for the effective control of the quality and authenticity of such therapeutic substances offered for sale to the public as can not be tested adequately by direct chemical means.

These substances do not include patent or proprietary medicines, which are under the control of the Select Committee on Patent Medicines, appointed in 1912, but are biological products, such as serums and vaccines, and mineral and vegetable bodies, such as salvarsan and digitalis—substances the purity and standard of efficacy of which can not be adequately ascertained by the employment of ordinary chemical tests as can that of the great majority of medicinal substances. The determination can be made only in properly equipped laboratories by the employment of biological and physiological methods.

At the present time there is not in England, as there is in some other countries, any effective supervision and control of the manufacture or standardization of many of the important biological products. In the United States, under an act of Congress, 1902, which provides for the regulation of the sale of viruses, serums, toxins, and analogous products in the District of Columbia, and of interstate traffic in said articles, and for other purposes, rules have been promulgated by the board, consisting of the Surgeons General of the Army, Navy, and the Public Health Service, governing the issuance of licenses. Under these rules licenses are issued, suspended, and revoked by the Secretary of the Treasury, upon the recommendation of the Surgeon General of the United States Public Health Service. Licenses are issued only after the inspection of establishments and examination of the products for which the license is desired.

The committee appointed by the British Minister of Health is to devise measures to conduct and control the various tests and standards employed by firms and persons engaged in the preparation and sale of such therapeutic substances as those mentioned above, and to devise a uniform system of standardization and control in order to guarantee that these agents are what they purport to be and are of an accepted standard of efficacy.

## ANTENUPTIAL EXAMINATION OF MALES FOR VENEREAL INFECTION.

An Alabama law, approved February 19, 1919, requires that all male persons making application for license to marry shall be examined to ascertain whether or not they are venereally infected. The law, which is very similar to the Wisconsin statute,<sup>1</sup> reads as follows:

SECTION 1. All male persons making application for license to marry shall at any time within 15 days prior to such application be examined as to the existence or non-existence in such person of any venereal disease, and it shall be unlawful for the judge of probate of any county to issue a license to marry to any person who fails to present and file with such judge of probate a certificate setting forth that such person is free from venereal diseases so nearly as can be determined by a thorough examination and by the application of the recognized clinical and laboratory test of scientific search, when in the discretion of the examining physician such clinical and laboratory tests are necessary. Such certificate shall be made by a licensed physician, shall be filed with the application for license to marry, and shall read as follows, to wit: I, ..... (name of physician) being a legally licensed physician, do certify that I have this ..... day of ....., 19..., made a thorough examination of ..... (name of applicant), and believe him to be free from all venereal diseases. .... (name of physician). That no marriage shall be entered into in any manner whatsoever without the male party shall have first submitted to said antenuptial examination and having obtained a certificate from such physician of his freedom from said diseases.

SEC. 2. Such examiners shall be physicians duly licensed to practice in this State. The health officer of any county shall, upon request, make the necessary examination and issue such certificate, if the same can be properly issued, without charge to the applicant. The charge for such an examination shall in no case exceed \$5.

SEC. 3. Any judge of probate who shall unlawfully issue a license to marry [to] any male person who fails to present and file with the probate judge a certificate required by section 1 of this act shall be guilty of a misdemeanor, and shall upon conviction be fined not less than \$50 nor more than \$100, or be sentenced to hard labor for the county not exceeding six months, one or both in the discretion of the court or judge trying the case.

SEC. 4. Any physician who shall knowingly and wilfully make any false statement in the certificate provided for in section 1 of this act, shall be punished by a fine of not more than \$100, or sentenced for not more than six months' hard labor for county.

<sup>1</sup> The first Wisconsin statute was ch. 738, laws of 1913 (Pub. Health Repts. Reprint 264, p. 504). This statute was held valid in *Peterson v. Widule*, 147 N. W. 966 (Reprint 342, p. 57), but by ch. 525, laws of 1915 (Reprint 338, p. 574), certain sections of the original act were repealed and the other sections amended. In 1917 the law was further amended by ch. 212 (Reprint 450, p. 30), and an additional law, ch. 483 (Reprint 450, p. 31), enacted.

The Public Health Service is unable to supply the demand for bound copies of the Public Health Reports. Librarians and others receiving the Public Health Reports regularly should preserve them, as it will probably not be practicable to furnish bound copies on individual requests in the future.



## DEATHS DURING WEEK ENDED MAY 29, 1920.

[From the "Weekly Health Index," June 1, 1920, issued by the Bureau of the Census, Department of Commerce.]

Deaths from all causes in certain large cities of the United States during the week ended May 29, 1920, infant mortality (per cent), annual death rates, and comparison with corresponding week of preceding years.

City.	Population Jan. 1, 1920, subject to revision.	Week ended May 29, 1920.		Average annual death rate per 1,000. <sup>2</sup>	Per cent of deaths under 1 year.	
		Total deaths.	Death rate. <sup>1</sup>		Week ended May 29, 1920.	Previous year or years. <sup>3</sup>
Akron, Ohio.....	208,435	46	11.5		17.4	
Albany, N. Y.....	113,344	33	15.2	C 17.8	12.1	C 13.2
Atlanta, Ga.....	201,732	66	17.1	C 18.4	13.6	C 8.5
Baltimore, Md.....	733,826	212	15.1	A 14.8	13.7	A 14.7
Birmingham, Ala.....	197,670	44	11.6	A 18.9	20.5	A 14.9
Boston, Mass.....	785,245	257	17.1	A 17.6	18.3	A 16.7
Bridgeport, Conn.....	143,152	34	12.4		29.4	
Buffalo, N. Y.....	473,229	125	13.8	C 13.2	14.4	C 22.
Cambridge, Mass.....	111,432	33	15.4	A 12.9	12.1	A 11.
Chicago, Ill.....	2,596,681	660	12.0	A 14.2	17.7	A 16.5
Cincinnati, Ohio.....	401,158	131	17.0	C 17.9	9.9	C 12.5
Cleveland, Ohio.....	810,306	186	12.0	C 10.9	16.1	C 15.3
Columbus, Ohio.....	225,296	60	13.9	C 12.5	8.3	C 7.4
Dayton, Ohio.....	153,830	35	11.9	C 6.7	14.3	C 15.8
Denver, Colo.....	256,369	78	15.9	A 12.6	11.5	
Detroit, Mich.....	128,392	244			18.0	
Fall River, Mass.....	135,450	21	8.5	C 9.7	23.8	C 20.8
Grand Rapids, Mich.....	290,389	52	20.0	C 11.5	23.1	C 10.0
Indianapolis, Ind.....	297,864	90	16.2	C 18.0	8.9	C 8.0
Jersey City, N. J.....	313,785	73	12.8	C 10.5		C 18.6
Kansas City, Mo.....	568,495	81	13.5	C 14.6	14.8	C 4.6
Los Angeles, Calif.....	234,891	159	14.6	A 12.0	15.1	A 12.1
Louisville, Ky.....	112,479	63	14.0	C 10.9	12.7	C 10.1
Lowell, Mass.....	162,351	24	11.1	A 18.1	25.0	A 19.8
Memphis, Tenn.....	457,147	51	16.4	C 17.9	17.6	C 9.3
Milwaukee, Wis.....	380,498	114	13.0	A 12.5	21.9	A 19.7
Minneapolis, Minn.....	118,342	95	13.0	C 10.1	13.7	C 15.5
Nashville, Tenn.....	415,609	41	18.1	C 20.0	9.8	C 4.4
Newark, N. J.....	154,805	99	12.4	C 14.7	13.1	C 22.8
New Haven, Conn.....	387,408	35	11.8	C 14.1	17.1	C 14.3
New Orleans, La.....	215,879	108	14.5	A 21.0	12.0	A 16.9
New York, N. Y.....	5,215,879	1,261	12.6	C 11.8	16.6	C 15.1
Oakland, Calif.....	216,361	43	12.6	A 10.1	14.0	A 6.7
Omaha, Nebr.....	180,264	41	11.9	C 10.4	14.6	C 13.9
Philadelphia, Pa.....	1,761,371	467	13.8	A 14.4	16.1	A 12.7
Pittsburgh, Pa.....	588,193	181	16.0	C 15.1	22.7	C 16.7
Portland, Oreg.....	258,288	53	10.7	C 15.0	9.4	C 5.6
Providence, R. I.....	263,613	55	10.9	C 14.4	14.5	C 24.7
Richmond, Va.....	160,719	55	17.8	C 18.5	7.3	C 12.3
Rochester, N. Y.....	264,556	85	16.7	C 14.0	12.9	C 16.9
St. Louis, Mo.....	773,000	177	11.9	C 14.2	9.0	C 11.6
St. Paul, Minn.....	234,595	58	12.9	C 11.3	8.6	C 8.0
San Francisco, Calif.....	478,530	131	14.3	C 15.0	3.8	C 8.7
Seattle, Wash.....	315,652	57	9.4	A 7.7	33.3	A 6.9
Spokane, Wash.....	104,204	25	12.5	C 10.0	4.0	C 15.0
Syracuse, N. Y.....	171,647	54	16.4	C 13.5	14.8	C 27.9
Toledo, Ohio.....	243,109	54	11.6	A 15.3	11.1	A 13.7
Washington, D. C.....	437,571	99	11.8	A 14.0	15.2	A 10.7
Worcester, Mass.....	173,650	68	20.4	C 12.9	14.7	C 14.0

<sup>1</sup> Annual rates per 1,000 estimated population.

<sup>2</sup> "A" indicates data for the corresponding week of the years 1913 to 1917, inclusive. "C" indicates data for the corresponding week of the year 1917.

<sup>3</sup> Population estimated as of July 1, 1918.

<sup>4</sup> Data are based on statistics of 1915, 1916, and 1917.

Summary of information received by telegraph from industrial insurance companies for week ended May 29, 1920.

Policies in force.....	43,961,323
Number of death claims.....	8,257
Death claims per 1,000 policies in force, annual rate.....	9.8

# PREVALENCE OF DISEASE.

*No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring.*

## UNITED STATES.

### CURRENT STATE SUMMARIES.

#### Telegraphic Reports for Week Ended June 5, 1920.

These reports are preliminary, and the figures are subject to change when later returns are received by the State health officers.

ALABAMA.		CALIFORNIA—continued.	
	Cases.		Cases.
Chicken pox.....	18	Lethargic encephalitis:	
Diphtheria.....	3	Berkeley.....	1
Dysentery.....	10	Oakland.....	1
Malaria.....	16	Palo Alto.....	1
Measles.....	24	San Francisco.....	1
Pellagra.....	8	Pellagra.....	1
Scarlet fever.....	3	Smallpox.....	51
Smallpox:		Typhoid fever.....	12
Jefferson County.....	8		
Walker County.....	19		
Scattering.....	10		
Tuberculosis (pulmonary).....	13		
Typhoid fever.....	18		
Whooping cough.....	31		
ARKANSAS.		CONNECTICUT.	
Cerebrospinal meningitis.....	3	Chicken pox.....	12
Chicken pox.....	41	Diphtheria.....	33
Diphtheria.....	8	German measles.....	1
Hookworm.....	2	Lethargic encephalitis.....	1
Influenza.....	22	Malaria.....	2
Malaria.....	186	Measles:	
Measles.....	64	Fairfield County—Greenwich.....	13
Pellagra.....	22	Hartford County—	
Scarlet fever.....	20	Farmington.....	11
Smallpox.....	29	Hartford.....	33
Trachoma.....	9	West Hartford.....	7
Tuberculosis.....	26	Middlesex County—Essex.....	27
Typhoid fever.....	11	New Haven County—North Haven.....	16
Whooping cough.....	78	New London County—Groton (B).....	10
		Windham County—Danielson.....	14
		Scattering.....	57
		Mumps.....	12
		Pneumonia (lobar).....	5
		Scarlet fever.....	42
		Tuberculosis (all forms).....	30
		Typhoid fever.....	4
		Whooping cough.....	34
CALIFORNIA.		DELAWARE.	
Cerebrospinal meningitis:		Chicken pox.....	4
Oakland.....	1	Diphtheria.....	3
Los Angeles County.....	1	Measles.....	67
Influenza.....	30		

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DELAWARE—continued.		Cases.	INDIANA.		Cases.
Pneumonia.....		1	Diphtheria.....		2
Scarlet fever:			Measles:		
Wilmington.....		15	Boone County.....		70
Scattering.....		2	Scattering.....		332
Tuberculosis.....		3	Poliomyelitis:		
Typhoid fever.....		1	Henry County.....		1
Whooping cough.....		21	Lake County.....		1
FLORIDA.			Rabies in animal:		
Cerebrospinal meningitis.....		1	Clarke County.....		1
Diphtheria.....		4	Scarlet fever.....		165
Dysentery.....		6	Smallpox:		
Influenza.....		14	Greene County.....		39
Malaria.....		23	Scattering.....		168
Pneumonia.....		12	IOWA.		
Scarlet fever.....		3	Cerebrospinal meningitis—Polk County.....		1
Smallpox.....		2	Chicken pox.....		9
Typhoid fever.....		17	Diphtheria.....		15
GEORGIA.			Measles:		
Chicken pox.....		20	Burlington.....		13
Conjunctivitis (acute infectious).....		2	Davenport.....		7
Diphtheria.....		10	Des Moines.....		7
Dysentery (amebic).....		12	Dubuque.....		19
Dysentery (bacillary).....		51	Scattering.....		18
German measles.....		1	Scarlet fever.....		39
Hookworm.....		7	Smallpox:		
Influenza.....		9	Council Bluffs.....		16
Malaria.....		86	Des Moines.....		10
Measles.....		90	Dubuque.....		14
Mumps.....		9	Ottumwa.....		8
Paratyphoid fever.....		3	Wright County.....		11
Pneumonia.....		12	Scattering.....		70
Scarlet fever.....		5	Whooping cough.....		6
Septic sore throat.....		6	KANSAS.		
Smallpox.....		22	Chicken pox.....		39
Tetanus.....		1	Measles.....		230
Trachoma.....		2	Scarlet fever.....		29
Tuberculosis (pulmonary).....		10	Smallpox.....		86
Typhoid fever.....		10	Whooping cough.....		87
Whooping cough.....		55	LOUISIANA.		
ILLINOIS.			Malaria.....		14
Cerebrospinal meningitis:			Measles.....		12
Aurora.....		1	Scarlet fever.....		4
Springfield.....		1	Smallpox.....		21
Diphtheria:			Tuberculosis.....		45
Chicago.....		133	Typhoid fever.....		16
Scattering.....		25	Whooping cough.....		10
Influenza.....		8	MAINE.		
Pneumonia:			Chicken pox.....		11
Chicago.....		116	Diphtheria.....		4
Scattering.....		12	Measles:		
Poliomyelitis:			Bangor.....		32
Pekin.....		1	Lewiston.....		12
Scarlet fever:			Portland.....		9
Bloomington.....		7	Scattering.....		13
Chicago.....		94	Mumps.....		12
Rockford.....		9	Pneumonia.....		2
Scattering.....		47	Scarlet fever:		
Smallpox:			Portland.....		7
Sesser.....		10	Scattering.....		10
Scattering.....		90	Smallpox.....		7
Typhoid fever.....		13	Tuberculosis.....		14
			Typhoid fever.....		5
			Whooping cough.....		23

MARYLAND. <sup>1</sup>		NEBRASKA—continued.	
	Cases.		Cases.
Cerebrospinal meningitis.....	2	Measles:	
Chicken pox.....	41	Lincoln.....	8
Diphtheria.....	30	Omaha.....	45
German measles.....	4	Plattsmouth.....	9
Influenza.....	7	Scattering.....	28
Lethargic encephalitis.....	2	Mumps.....	4
Malaria.....	2	Scarlet fever:	
Measles.....	327	Buffalo County.....	25
Mumps.....	17	Scattering.....	10
Ophthalmia neonatorum.....	2	Smallpox:	
Pneumonia (all forms).....	79	Auburn.....	9
Polio-myelitis.....	2	Buffalo County.....	11
Scarlet fever.....	51	Clay County.....	12
Septic sore throat.....	1	Lincoln.....	9
Smallpox.....	8	Merrick County.....	8
Tuberculosis.....	50	Omaha.....	8
Typhoid fever.....	1	Scattering.....	48
Whooping cough.....	33	Typhoid fever.....	2
		Whooping cough.....	11
MASSACHUSETTS.		NEW JERSEY.	
Cerebrospinal meningitis.....	2	Influenza.....	2
Chicken pox.....	52	Pneumonia.....	10
Conjunctivitis (suppurative).....	10	Smallpox—Morristown.....	1
Diphtheria.....	119		
German measles.....	20	NEW YORK.	
Influenza.....	6	(Exclusive of New York City.)	
Malaria.....	2		
Measles.....	1390	Cerebrospinal meningitis—Elmira City.....	1
Mumps.....	162	Diphtheria.....	182
Ophthalmia neonatorum.....	31	Lethargic encephalitis:	
Pneumonia (lobar).....	70	Elmira.....	1
Polio-myelitis.....	2	Peekskill.....	1
Scarlet fever.....	181	Tuxedo.....	1
Septic sore throat.....	3	Measles.....	1,682
Tetanus.....	1	Pneumonia.....	190
Trachoma.....	1	Scarlet fever.....	132
Tuberculosis (all forms).....	177	Smallpox.....	10
Typhoid fever.....	12	Typhoid fever.....	11
Whooping cough.....	234	Whooping cough.....	233
MINNESOTA.		NORTH CAROLINA.	
Smallpox.....	15	Cerebrospinal meningitis.....	1
		Chicken pox.....	34
MISSISSIPPI.		Diphtheria.....	16
		Dysentery (bacillary).....	1
Cerebrospinal meningitis.....	1	Measles.....	174
Diphtheria.....	4	Ophthalmia neonatorum.....	1
Influenza.....	2	Scarlet fever.....	23
Scarlet fever.....	2	Septic sore throat.....	5
Smallpox.....	13	Smallpox.....	63
Typhoid fever.....	1	Typhoid fever.....	27
		Whooping cough.....	333
MONTANA.		OHIO.	
Diphtheria.....	1	Diphtheria—Cincinnati.....	8
Rocky Mountain spotted or tick fever:		Scarlet fever:	
Roundup.....	1	Akron.....	15
Helena.....	1	Cincinnati.....	588
Scarlet fever.....	18	Springfield.....	8
Smallpox.....	26	Youngstown.....	14
		Smallpox:	
NEBRASKA.		Akron.....	16
		Cincinnati.....	7
Chicken pox.....	6		
Diphtheria.....	2		
Influenza.....	3		

<sup>1</sup> Week ended Friday.

OHIO—continued.	
Smallpox—Continued.	Cases.
Cuyahoga Falls.....	6
Morrow County—North Bloomfield Township.....	13
Youngstown.....	6
TEXAS.	
Chicken pox.....	16
Diphtheria.....	16
Dysentery.....	7
Influenza.....	3
Malaria:	
Henderson County.....	12
Waller County.....	31
Scattering.....	7
Measles:	
Ballinger.....	7
Dallas.....	30
El Paso.....	11
Scattering.....	9
Pellagra.....	6
Pneumonia.....	4
Scarlet fever.....	10
Smallpox:	
Bosque County.....	14
Henderson County.....	7
Hunt County.....	8
Palo Pinto County.....	12
Scattering.....	36
Tuberculosis.....	20
Typhoid fever.....	13
Whooping cough.....	56
VERMONT.	
Chicken pox.....	15
Diphtheria.....	3
Measles.....	224
Mumps.....	33
Pneumonia.....	1
Scarlet fever.....	6
Typhoid fever.....	2
Whooping cough.....	55
VIRGINIA.	
Smallpox:	
Lee County, several cases.	
WASHINGTON.	
Chicken pox.....	34
Diphtheria.....	34

WASHINGTON—continued.	
Influenza.....	Cases. 1
Measles.....	319
Mumps.....	10
Pneumonia.....	2
Scarlet fever.....	35
Smallpox.....	72
Tuberculosis.....	6
Typhoid fever.....	1
Whooping cough.....	32
WEST VIRGINIA.	
Cerebrospinal meningitis—Huntington.....	1
Diphtheria.....	5
Measles:	
Parkersburg.....	11
Weilsburg.....	15
Wheeling.....	44
Scattering.....	31
Scarlet fever.....	16
Smallpox:	
Bluefield.....	9
Scattering.....	4
Typhoid fever.....	12
WISCONSIN.	
Milwaukee:	
Cerebrospinal meningitis.....	1
Chicken pox.....	54
Diphtheria.....	10
Measles.....	475
Rubella.....	1
Scarlet fever.....	23
Smallpox.....	8
Tuberculosis.....	22
Typhoid fever.....	1
Whooping cough.....	49
Scattering:	
Cerebrospinal meningitis.....	1
Chicken pox.....	88
Diphtheria.....	18
Influenza.....	9
Measles.....	993
Poliomyelitis.....	5
Scarlet fever.....	115
Smallpox.....	145
Tuberculosis.....	21
Typhoid fever.....	14
Whooping cough.....	35

## Kentucky Report for Week Ended May 29, 1920.

	Cases.		Cases.
Chicken pox.....	8	Pneumonia.....	7
Diphtheria.....	9	Scarlet fever:	
Erysipelas.....	1	Jefferson County.....	11
Influenza.....	1	Kenton County.....	7
Malaria.....	1	Scattering.....	2
Measles:		Smallpox:	
Christian County.....	7	Davies County.....	26
Hopkins County.....	8	Scattering.....	11
Jefferson County.....	33	Trachoma.....	4
Kenton County.....	8	Tuberculosis.....	23
Scattering.....	20	Typhoid fever.....	5
Mumps.....	2	Whooping cough.....	20



**ANTHRAX.****Philadelphia, Pa.—Week Ended May 22, 1920.**

During the week ended May 22, 1920, one case of anthrax was reported at Philadelphia, Pa.

**CEREBROSPINAL MENINGITIS.****City Reports for Week Ended May 22, 1920.**

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Baltimore, Md.....	2	1	Milwaukee, Wis.....	2	2
Bedford, Ind.....	1	1	Moundsville, W. Va.....	1	1
Birmingham, Ala.....	1	1	New York, N. Y.....	8	7
Boston, Mass.....	1	2	Oakland, Calif.....	1	2
Chicago, Ill.....	1	1	Oklahoma City, Okla.....	1	1
Framingham, Mass.....	1	1	Passaic, N. J.....	1	2
Hammond, Ind.....	1	1	Philadelphia, Pa.....	2	2
Jersey City, N. J.....	1	1	Providence, R. I.....	1	1
Kansas City, Mo.....	1	1	Syracuse, N. Y.....	1	1
Los Angeles, Calif.....	1	1	Wheeling, W. Va.....	1	1

**DIPHTHERIA.**

See Telegraphic weekly reports from States, p. 1403; and Weekly reports from cities, p. 1413.

**INFLUENZA.****City Reports for Week Ended May 22, 1920.**

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Atlanta, Ga.....	1	1	Los Angeles, Calif.....	5	1
Baltimore, Md.....	7	1	Minneapolis, Minn.....	1	2
Beaumont, Tex.....	1	1	Montgomery, Ala.....	1	1
Berkeley, Calif.....	1	1	Mt. Vernon, N. Y.....	1	1
Boston, Mass.....	5	1	Muncie, Ind.....	1	1
Bridgport, Conn.....	1	1	New Britain, Conn.....	1	1
Cambridge, Mass.....	6	1	New York, N. Y.....	16	15
Chelsea, Mass.....	1	1	Niagara Falls, N. Y.....	1	1
Chicago, Ill.....	16	1	Philadelphia, Pa.....	1	4
Cincinnati, Ohio.....	1	1	Reno, Nev.....	1	1
Cleveland, Ohio.....	1	1	Richmond, Ind.....	1	1
Cohoes, N. Y.....	2	1	Rochester, N. Y.....	1	1
Colorado Springs, Colo.....	2	1	Sacramento, Calif.....	1	1
Cumberland, Md.....	5	1	San Francisco, Calif.....	3	1
Dallas, Tex.....	1	2	Springfield, Mass.....	1	1
Elizabeth, N. J.....	1	1	Syracuse, N. Y.....	1	1
Huntington, W. Va.....	1	1	Trenton, N. J.....	8	2
Jamestown, N. Y.....	1	1	Watertown, Mass.....	1	1
Kansas City, Mo.....	3	4	West Orange, N. J.....	1	1

**LEPROSY.****Galveston, Tex., and Los Angeles, Calif.**

During the week ended May 22, 1920, one case of leprosy was reported at Galveston, Tex., and one case at Los Angeles, Calif.

**LETHARGIC ENCEPHALITIS.****Omaha, Nebr., Portland, Oreg., and San Francisco, Calif.**

During the week ended May 22, 1920, lethargic encephalitis was reported as follows: Omaha, Nebr., 1 death; Portland, Oreg., 2 deaths; San Francisco, Calif., 1 case.

**MALARIA.****City Reports for Week Ended May 22, 1920.**

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Alexandria, La.....	18	.....	Los Angeles, Calif. ....	1	.....
Atlanta, Ga.....	4	.....	Macon, Ga.....	3	.....
Austin, Tex.....	.....	1	Memphis, Tenn.....	1	.....
Fort Smith, Ark.....	2	.....	San Francisco, Calif.....	1	.....
Jersey City, N. J.....	1	.....	Savannah, Ga.....	1	1
Little Rock, Ark.....	1	.....	Wilmington, N. C.....	1	.....

**MEASLES.**

See Telegraphic weekly reports from States, p. 1403; and Weekly reports from cities, p. 1413.

**PELLAGRA.****City Reports for Week Ended May 22, 1920.**

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Alameda, Calif.....	1	.....	Glens Falls, N. Y.....	.....	1
Charlotte, N. C.....	.....	1	Little Rock, Ark.....	1	.....
Dallas, Tex.....	.....	1	Memphis, Tenn.....	.....	1
Fort Worth, Tex.....	.....	1	Montgomery, Ala.....	.....	1

**PLAGUE (HUMAN).****New Orleans, La.**

One case of human plague in New Orleans was diagnosed on May 15, 1920; diagnosis confirmed, May 27.

The patient (J. D. B.), aged 42, was employed as trapper in the vicinity of Chartres and Press Streets on the date of onset, May 13. His recovery was reported May 29.

One case of human plague in New Orleans was confirmed June 8, 1920.

The patient (E. R. R.), aged 37, was employed as a night sweeper in a store on Canal Street.

**PLAGUE (RODENT).****California—Weeks Ended May 15 and 22, 1920.**

The following table shows the number of ground squirrels (*Citellus beecheyi*) confirmed as plague infected during the weeks ended May 15 and 22; also the number of squirrels collected for examination during the same period:

County.	Week ended May 15.		Week ended May 22.	
	Plague infection confirmed during week.	Squirrels collected.	Plague infection confirmed during week.	Squirrels collected.
Alameda.....	3	656	3	775
Contra Costa.....	4	521	10	634
Merced.....	None.	162	None.	112
Monterey.....	None.	238	None.	305
San Benito.....	None.	382	1	272
San Joaquin.....	None.	144	None.	176
San Mateo.....	None.	150	1	276
Santa Clara.....	None.	334	None.	342
Santa Cruz.....	1	127	1	138
Santa Cruz (city).....			1	
Stanislaus.....	None.	214	None.	171
Total.....	8	2,928	17	3,201

Other animals collected for examination were as follows: Week ended May 15, San Francisco, 16 rats; Alameda County, 3 mice; Monterey County, 7 rabbits, 1 weasel; Stanislaus County, 1 weasel; and week ended May 22, San Francisco, 48 rats; Alameda County, 1 rabbit; and Monterey County, 2 rabbits and 1 weasel. None was confirmed as plague infected during the week.

**New Orleans, La.—Weeks Ended May 22 and 29, 1920.**

During the week ended May 22, plague-infected rats were confirmed as follows: *Mus norvegicus*, 3, and wood rat, 1. None was confirmed as plague-infected during the week ended May 29.

The classification of rodents captured is as follows:

	Week ended—	
	May 22.	May 29.
<i>Mus norvegicus</i> .....	5,744	4,560
<i>Mus rattus</i> .....	249	275
<i>Mus alexandrinus</i> .....	511	606
<i>Mus musculus</i> .....	4,624	3,912
Wood rats.....	48	34
Miscellaneous.....	9	9
Putrid.....	151	324
Total.....	11,336	9,720

**PNEUMONIA (ALL FORMS).**

**City Reports for Week Ended May 22, 1920.**

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Akron, Ohio.....	10		Atlanta, Ga.....	1	7
Alameda, Calif.....	2		Atlantic City, N. J.....	4	
Albany, N. Y.....	10		Attleboro, Mass.....	1	
Alexandria, La.....		2	Aurora, Ill.....	1	1
Anaconda, Mont.....	1	1	Austin, Tex.....		2
Ann Arbor, Mich.....	1	1	Baltimore, Md.....	58	20
Ashtabula, Ohio.....		1	Barberton, Ohio.....	1	2
Atchison, Kans.....	1		Battle Creek, Mich.....	1	

## PNEUMONIA (ALL FORMS)—Continued.

City Reports for Week Ended May 22, 1920—Continued.

Place.	Cases	Deaths.	Place.	Cases.	Deaths.
Bayonne, N. J.	1		Jacksonville, Ill.		2
Beatrice, Nebr.		2	Jamestown, N. Y.	2	
Beaumont, Tex.		2	Jefferson City, Mo.		1
Bedford, Ind.		1	Jersey City, N. J.	4	
Beverly, Mass.	1		Joplin, Mo.	1	
Biddeford, Me.	2		Kalamazoo, Mich.	9	2
Binghamton, N. Y.	7	1	Kansas City, Kans.	4	
Birmingham, Ala.		2	Kansas City, Mo.	20	6
Bloomington, Ill.	1	1	Keene, N. H.	1	
Boston, Mass.	40	22	Lackawanna, N. Y.	9	
Bridgeport, Conn.		2	Lawrence, Mass.	1	
Bristol, Conn.		2	Lexington, Ky.	1	2
Brockton, Mass.	1	3	Lincoln, Nebr.	1	
Brookline, Mass.	1		Lockport, N. Y.	1	
Buffalo, N. Y.		8	Lorain, Ohio	3	1
Burlington, Vt.		3	Los Angeles, Calif.	28	11
Butte, Mont.		2	Louisville, Ky.	2	6
Cambridge, Mass.	5	5	Lowell, Mass.	4	3
Canton, Ohio.		2	Lynn, Mass.	1	
Charleston, W. Va.	1		Manchester, N. H.	1	1
Charlotte, N. C.	1		Marquette, Mich.	1	
Chattanooga, Tenn.		2	Memphis, Tenn.		4
Chelsea, Mass.		2	Meriden, Conn.	2	
Chicago, Ill.	194	83	Methuen, Mass.	1	
Chicopee, Mass.		3	Middletown, N. Y.	2	
Cincinnati, Ohio.		14	Milwaukee, Wis.		10
Cleveland, Ohio.	31	39	Minneapolis, Minn.		6
Cohoes, N. Y.	10		Mobile, Ala.		2
Colorado Springs, Colo.		1	Monmouth, Ill.		
Columbus, Ohio.		9	Morristown, N. J.	1	
Concord, N. H.		1	Moundsville, W. Va.		1
Corpus Christi, Tex.	1	1	Mount Vernon, N. Y.	5	6
Cortland, N. Y.	1		Nashua, N. H.	1	1
Council Bluffs, Iowa.		2	Nashville, Tenn.		3
Covington, Ky.		3	New Bedford, Mass.		7
Cranston, R. I.	1	1	New Britain, Conn.	1	
Cumberland, Md.	5		Newburyport, Mass.	1	1
Dallas, Tex.	3	1	New Castle, Ind.	1	1
Danvers, Mass.	3	2	New Haven, Conn.		6
Danville, Ill.		3	New London, Conn.	3	3
Dayton, Ohio.	2		New Orleans, La.		
Decatur, Ill.		1	New York, N. Y.	276	134
Denver, Colo.		6	Niagara Falls, N. Y.	7	3
East Chicago, Ind.		2	North Adams, Mass.	1	3
Easthampton, Mass.	4	1	North Attleboro, Mass.	1	1
East St. Louis, Ill.	1	3	North Tonawanda, N. Y.	1	
Elgin, Ill.		2	Norwalk, Conn.		2
Elizabeth, N. J.	3	7	Oakland, Calif.		5
Elkhart, Ind.		2	Oak Park, Ill.	1	2
El Paso, Tex.		5	Olean, N. Y.		11
Englewood, N. J.	1	1	Omaha, Nebr.		
Eureka, Calif.	1	1	Orange, N. J.	1	1
Everett, Mass.	1	1	Pasadena, Calif.	1	1
Fall River, Mass.	7	5	Pasatic, N. J.		2
Findlay, Ohio.		1	Pawtucket, R. I.		2
Fort Wayne, Ind.		5	Petersburg, Va.		
Fort Worth, Tex.	1	1	Philadelphia, Pa.	26	61
Framingham, Mass.		1	Phillipsburg, N. J.	1	1
Fresno, Calif.		2	Pittsfield, Mass.		2
Galveston, Tex.		2	Plymouth, N. J.	1	
Gary, Ind.	3	5	Plymouth, Mass.		2
Gloucester, City N. J.			Pontiac, Mich.	1	
Grand Rapids, Mich.	15	3	Port Chester, N. Y.		1
Granite City, Ill.		1	Portland, Me.		4
Great Falls, Mont.	3	3	Portland, Ore.		8
Greenwich, Conn.	1	1	Portsmouth, Ohio.		1
Hackensack, N. J.	4		Poughkeepsie, N. Y.	6	8
Hammond, Ind.		7	Providence, R. I.	1	
Harrison, N. J.	1		Pueblo, Colo.		2
Hartford, Conn.	2	5	Quincy, Mass.		2
Haverhill, Mass.	1	1	Reno, Nev.		1
Hoboken, N. J.		5	Richmond, Ind.		1
Holyoke, Mass.		2	Richmond, Va.	2	6
Houston, Tex.	4	4	Riverside, Calif.		1
Huntington, W. Va.		2	Rochester, N. Y.	19	3
Independence, Mo.	1	1	Rock Island, Ill.	2	2
Indianapolis, Ind.		13	Rome, N. Y.	1	
Ironton, Ohio.		1	Sacramento, Calif.		1
Ironwood, Mich.		2	Saginaw, Mich.	1	1

**PNEUMONIA (ALL FORMS)—Continued.****City Reports for Week Ended May 22, 1920—Continued.**

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
St. Joseph, Mo.		4	Toledo, Ohio.	2	9
St. Paul, Minn.		7	Topeka, Kans.	2	5
Salem, Mass.	1		Trenton, N. J.	3	
Salt Lake City, Utah.	6		Troy, N. Y.	5	3
San Diego, Calif.	4	4	Vallejo, Calif.		1
Sandusky, Ohio.	3		Waltham, Mass.	1	1
San Francisco, Calif.	10	4	Washington, D. C.		8
Santa Cruz, Calif.	1		Watertown, N. Y.	3	2
Sault Ste. Marie, Mich.	1	1	Westfield, Mass.	1	1
Schenectady, N. Y.	3	3	West New York, N. J.		2
Somerville, Mass.	5	2	Wheeling, W. Va.		2
Springfield, Ill.	1	1	Wichita, Kans.		6
Springfield, Mass.	3	1	Willimantic, Conn.	1	1
Springfield, Ohio.		2	Wilmington, N. C.		1
Staunton, Va.		1	Worcester, Mass.	13	6
Syracuse, N. Y.	5	10	Yonkers, N. Y.	2	2
Taunton, Mass.		2	Zanesville, Ohio.		1
Terre Haute, Ind.		2			

**POLIOMYELITIS (INFANTILE PARALYSIS).****City Reports for Week Ended May 22, 1920.**

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Chicago, Ill.	1		New York, N. Y.	1	
Los Angeles, Calif.	1		Toledo, Ohio.	1	1
Milwaukee, Wis.	1				

**RABIES IN ANIMALS.****City Reports for Week Ended May 22, 1920.**

Place.	Cases.	Place.	Cases.
Cincinnati, Ohio.	1	Riverside, Calif.	1
Fall River, Mass.	1	Tuscaloosa, Ala.	1
Kansas City, Mo.	1	Wilmington, N. C.	1
North Little Rock, Ark.	2		

**SCARLET FEVER.**

See Telegraphic weekly reports from States, p. 1403; and Weekly reports from cities, p. 1413.

**SMALLPOX.****City Reports for Week Ended May 22, 1920.**

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Aberdeen, Wash.	1		Billings, Mont.	2	
Akron, Ohio.	5		Birmingham, Ala.	5	
Albany, N. Y.	1		Bluefield, W. Va.	9	
Alexandria, La.	2		Boise, Idaho.	9	
Ann Arbor, Mich.	3		Boston, Mass.	3	
Appleton, Wis.	8		Brazil, Ind.	1	
Ashtabula, Ohio.	2		Canton, Ohio.	10	
Atchison, Kans.	1		Cape Girardeau, Mo.	6	
Atlanta, Ga.	17		Cedar Rapids, Iowa.	5	
Auburn, Me.	1		Charleston, W. Va.	3	
Baltimore, Md.	2		Chattanooga, Tenn.	7	
Barberton, Ohio.	2		Chicago, Ill.	10	



## SMALLPOX—Continued.

## City Reports for Week Ended May 22, 1920—Continued.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Chillicothe, Ohio.....	3	.....	Memphis, Tenn.....	16	.....
Cincinnati, Ohio.....	3	.....	Milwaukee, Wis.....	11	.....
Cleveland, Ohio.....	3	.....	Minneapolis, Minn.....	37	.....
Colorado Springs, Colo.....	1	.....	Wichita, Kan.....	2	.....
Columbus, Ohio.....	2	.....	Missoula, Mont.....	2	.....
Coshocton, Ohio.....	1	.....	Mobile, Ala.....	5	.....
Council Bluffs, Iowa.....	5	.....	Montgomery, Ala.....	2	.....
Dallas, Tex.....	7	.....	Muskogee, Okla.....	3	.....
Danville, Ill.....	1	.....	New Orleans, La.....	16	3
Davenport, Iowa.....	7	.....	Niagara Falls, N. Y.....	1	.....
Dayton, Ohio.....	1	.....	Norfolk, Va.....	1	.....
Denver, Colo.....	30	.....	Oakland, Calif.....	1	.....
Dubuque, Iowa.....	18	.....	Oklahoma City, Okla.....	2	.....
Duluth, Minn.....	16	.....	Omaha, Nebr.....	14	.....
East St. Louis, Ill.....	4	.....	Parsons, Kans.....	2	.....
Eugene, Oreg.....	1	.....	Passaic, N. J.....	1	.....
Everett, Wash.....	2	.....	Pekin, Ill.....	4	.....
Fairmont, W. Va.....	1	.....	Pontiac, Mich.....	5	.....
Fargo, N. Dak.....	2	.....	Portland, Oreg.....	48	.....
Fond du Lac, Wis.....	3	.....	Portsmouth, Ohio.....	1	.....
Fort Scott, Kans.....	11	.....	Quincy, Ill.....	1	.....
Fort Wayne, Ind.....	1	.....	Racine, Wis.....	4	.....
Fort Worth, Tex.....	17	.....	Raleigh, N. C.....	1	.....
Fresno, Calif.....	1	.....	Reno, Nev.....	15	.....
Galesburg, Ill.....	12	.....	Richmond, Ind.....	1	.....
Gary, Ind.....	4	.....	Roanoke, Va.....	1	.....
Granite City, Ill.....	3	.....	Rock Island, Ill.....	4	.....
Great Falls, Mont.....	2	.....	Sacramento, Calif.....	2	.....
Greeley, Colo.....	3	.....	St. Cloud, Minn.....	1	.....
Green Bay, Wis.....	3	.....	St. Joseph, Mo.....	18	.....
Hammond, Ind.....	2	.....	St. Louis, Mo.....	15	.....
Holland, Mich.....	1	.....	St. Paul, Minn.....	7	.....
Houston, Tex.....	1	.....	Salem, Oreg.....	3	.....
Huntington, Ind.....	3	.....	Salt Lake City, Utah.....	43	.....
Independence, Mo.....	2	.....	San Diego, Calif.....	4	.....
Indianapolis, Ind.....	20	.....	Sandusky, Ohio.....	1	.....
Iowa City, Iowa.....	2	.....	San Francisco, Calif.....	5	.....
Ironwood, Mich.....	1	.....	Santa Cruz, Calif.....	1	.....
Jacksonville, Ill.....	21	.....	Seattle, Wash.....	14	.....
Janesville, Wis.....	1	.....	Sheboygan, Wis.....	5	.....
Joplin, Mo.....	2	.....	Sioux City, Iowa.....	2	.....
Kalamazoo, Mich.....	3	.....	Sioux Falls, S. Dak.....	1	.....
Kansas City, Kans.....	2	.....	South Bend, Ind.....	1	.....
Kansas City, Mo.....	14	1	Spokane, Wash.....	17	.....
Kenosha, Wis.....	8	.....	Stillwater, Minn.....	1	.....
Knoxville, Tenn.....	5	.....	Stockton, Calif.....	3	.....
Kokomo, Ind.....	13	.....	Superior, Wis.....	10	.....
Lawrence, Kans.....	2	.....	Tacoma, Wash.....	5	.....
Lima, Ohio.....	2	.....	Toledo, Ohio.....	4	.....
Lincoln, Nebr.....	10	.....	Topeka, Kans.....	4	.....
Little Rock, Ark.....	1	.....	Trinidad, Colo.....	1	.....
Long Beach, Calif.....	3	.....	Tuscaloosa, Ala.....	1	.....
Los Angeles, Calif.....	15	.....	Walla Walla, Wash.....	2	.....
Macon, Ga.....	11	.....	Wausau, Wis.....	1	.....
Madison, Wis.....	1	.....	Wichita, Kans.....	22	.....
Marinette, Wis.....	1	.....	Winona, Minn.....	1	.....
Marion, Ind.....	3	.....	Winston-Salem, N. C.....	3	.....
Marion, Ohio.....	4	.....	Yakima, Wash.....	1	.....
Marshalltown, Iowa.....	4	.....			

## TETANUS.

## City Reports for Week Ended May 22, 1920.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Baltimore, Md.....	.....	2	Passaic, N. J.....	.....	1
Baton Rouge, La.....	1	1	Philadelphia, Pa.....	.....	1
Fort Wayne, Ind.....	.....	1	Rochester, N. Y.....	.....	1
Indianapolis, Ind.....	.....	2	San Diego, Calif.....	.....	1
New York, N. Y.....	.....	1	Savannah, Ga.....	.....	1

## TUBERCULOSIS.

See Telegraphic weekly reports from States, p. 1403; and Weekly reports from cities, p. 1413.

## TYPHOID FEVER.

## City Reports for Week Ended May 22, 1920.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Auburn, Me.	5		Mount Vernon, N. Y.	1	
Baltimore, Md.	4		Newark, Ohio.	1	
Bangor, Me.	1		New Haven, Conn.	1	
Birmingham, Ala.	2	1	New Orleans, La.	1	
Boston, Mass.	3		New York, N. Y.	6	2
Bridgeport, Conn.	1		Niagara Falls, N. Y.	3	
Brockton, Mass.	1		Oakland, Calif.	1	
Charlotte, N. C.	1		Oklahoma City, Okla.	2	
Chicago, Ill.	3		Omaha, Nebr.	3	1
Cincinnati, Ohio.	1		Paterson, N. J.	2	
Columbia, S. C.	1		Philadelphia, Pa.	6	
Covington, Ky.	2	1	Piqua, Ohio.	1	
Dallas, Tex.		1	Plainfield, N. J.	1	
Duluth, Minn.	2		Portland, Oreg.	1	
Durham, N. C.	1		Quincy, Mass.	1	
El Paso, Tex.	1	1	Rahway, N. J.	1	
Everett, Mass.	1		Riverside, Calif.	1	
Fort Wayne, Ind.	1		Sacramento, Calif.	2	
Fremont, Ohio.	1		Saginaw, Mich.	2	
Galesburg, Ill.	1		Santa Barbara, Calif.	1	
Galveston, Tex.	1		Schenectady, N. Y.	1	
Hammond, Ind.		2	Seattle, Wash.	3	
Houston, Tex.	2		Springfield, Mass.	1	
Huntington, W. Va.		1	Stockton, Calif.	2	
Ironton, Ohio.	1		Tuscaloosa, Ala.	2	
Kansas City, Mo.	1		Waltham, Mass.	3	
Logansport, Ind.	11		Washington, D. C.	2	
Long Beach, Calif.	3		Waterbury, Conn.	1	
Lorain, Ohio.	3		Wheeling, W. Va.	3	
Los Angeles, Calif.	2		Wilmington, Del.	2	
Louisville, Ky.	3	1	Wilmington, N. C.	1	
Milwaukee, Wis.	2		Winston-Salem, N. C.	1	
Minneapolis, Minn.		1			

## DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS.

## City Reports for Week Ended May 22, 1920.

City.	Popula- tion as of July 1, 1917 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Aberdeen, S. Dak.	15,926	6	1		13		8			
Aberdeen, Wash.	21,392		1		6					
Adams, Mass.	14,406		1						1	
Akron, Ohio.	93,604	70	5		23		25		3	
Alameda, Calif.	28,433	2	1						1	
Albany, N. Y.	106,632				25		4		10	
Alton, Ill.	23,783	10			33				1	1
Amesbury, Mass.	10,200				14		1		1	
Anaconda, Mont.	10,631	4								1
Ann Arbor, Mich.	15,041	15	4		6		2			2
Anniston, Ala.	14,326				1					
Ansonia, Conn.	16,954	3	1	1						
Appleton, Wis.	18,005				43		3			
Arlington, Mass.	13,073	5			9		3		3	
Asbury Park, N. J.	14,629	3	1		14				1	
Ashtabula, Ohio.	22,008	3			1		1		1	
Atchison, Kans.	16,785		1		1					
Atlanta, Ga.	196,144	63			32	2	5		2	5
Atlantic City, N. J.	59,515	10	4		9				2	
Attleboro, Mass.	19,776	5			24					
Auburn, Me.	16,607	6								
Aurora, Ill.	34,795	15			5					1

## DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

## City Reports for Week Ended May 22, 1920—Continued.

City.	Population as of July 1, 1917 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Austin, Tex.	33,612	15	1		5					2
Baltimore, Md.	594,637	210	28	1	275	4	30		17	24
Bangor, Me.	26,958				24		2		3	
Barberton, Ohio.	14,187	6			2					
Barre, Vt.	12,401				12					
Baton Rouge, La.	17,544	6							2	2
Battle Creek, Mich.	30,159		5		49		22			
Bayonne, N. J.	72,204		3		72		3		2	
Beatrice, Nebr.	10,437	9	1		1					1
Beaumont, Tex.	28,851	12								1
Bedford, Ind.	10,613	4								
Belleville, N. J.	12,797		1		3		6		1	
Bellingham, Wash.	34,362		5		2					
Beloit, Wis.	18,547				109		4			
Berkley, Cal.	60,427	3	2		6		1			1
Beverly, Mass.	22,128	4	1		2		1			1
Biddeford, Me.	17,760	1	1							
Billings, Mont.	13,123	11			26		1		1	2
Binghamton, N. Y.	54,864	12	1		6		6		7	2
Birmingham, Ala.	189,716	46	1		8		3		8	2
Bloomfield, N. J.	19,013	2			6		3		1	1
Bloomington, Ill.	27,462	6					4		5	1
Bloomington, Ind.	11,661	4								1
Bluefield, W. Va.	16,123				1		1			
Boise, Idaho.	35,951	7			3		2			
Boston, Mass.	767,813	239	43	4	230	4	54	4	61	25
Brazil, Ind.	10,472	1								
Bridgeport, Conn.	124,724	33	7	1			2		4	2
Bristol, Conn.	16,318	3	1		5		1		2	
Brockton, Mass.	69,152	28	4		4		3		6	2
Brookline, Mass.	33,526	5	1		84		2			
Brunswick, Ga.	10,984	2								
Buffalo, N. Y.	475,781	130		8		1		2		12
Burlington, Iowa.	25,144				10		4			1
Burlington, Vt.	21,802	10	3		1					2
Butte, Mont.	44,057	15			1				4	7
Cadillac, Mich.	10,158	2			1					
Cairo, Ill.	15,935									2
Cambridge, Mass.	114,293	27	4	1	60		13		6	2
Canton, Ill.	13,674	2								
Canton, Ohio.	62,566	17	1		36		7		2	
Cape Girardeau, Mo.	11,146	5	1		3					1
Cedar Rapids, Iowa.	38,033						4			
Centralia, Ill.	11,838				21					
Charlotte, N. C.	40,759	14							3	2
Chattanooga, Tenn.	61,575	26								5
Chelsea, Mass.	45,405	11			31		1		3	
Cheyenne, Wyo.	11,320	1	1		1					
Chicago, Ill.	2,547,201	690	131	10	332		165	3	194	50
Chicopee, Mass.	29,950	15	3		4					2
Chillicothe, Ohio.	15,825	2			30		1			
Cincinnati, Ohio.	414,248	100	11	1	155	4	48		23	13
Cleveland, Ohio.	692,259	198	17		64	1	47	2	33	17
Clinton, Mass.	13,075	3							2	
Coffeyville, Kans.	18,331	4			5		1			
Cohoes, N. Y.	25,292	7	1						3	
Colorado Springs, Colo.	38,965	13			10				4	3
Columbia, S. C.	35,165				6					
Columbus, Ohio.	220,135	71	1		118	1	11		4	7
Concord, N. H.	22,858	12			31		1			1
Corpus Christi, Tex.	10,789	5			4	1				
Cortland, N. Y.	13,321	4					1		1	
Coshocton, Ohio.	11,887		1						1	
Council Bluffs, Iowa.	31,838	9	1		14		2			1
Covington, Ky.	59,623	23	2	1	8		4		3	
Cranston, R. I.	26,773	2					4			
Cumberland, Md.	26,686	8							1	1
Dallas, Tex.	129,738	48	1		27		1		7	11
Danbury, Conn.	22,931	2	1							
Danville, Ill.	32,969	12			2					1
Danville, Va.	20,183				1		1			

1 Population April 15, 1910.

## DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Contd.

City Reports for Week Ended May 22, 1920—Continued.

City.	Popula- tion as of July 1, 1917 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Davenport, Iowa.....	49,618				20					
Dayton, Ohio.....	128,939	35			14		8		1	
Decatur, Ill.....	41,483	6			4		1			
Dedham, Mass.....	10,618	2			3					
Denver, Colo.....	268,439	75	13		151	1	11	1		13
Dover, N. H.....	13,276	4			15					
Dubois, Pa.....	14,994	5	1		2		1			
Dubuque, Iowa.....	40,096				55		2			
Duluth, Minn.....	97,077	19			7				5	1
Durham, N. C.....	26,160	2							3	
East Chicago, Ind.....	30,286	8								
East Cleveland, Ohio.....	13,864						1		2	
Easthampton, Mass.....	10,656	2			36					1
East St. Louis, Ill.....	77,312	9	3		3				1	
Eau Claire, Wis.....	18,887				3		2			
Elein, Ill.....	28,352	8			26		4	1		
Elizabeth, N. J.....	88,830	12	4		39	2	6		6	2
Elkhart, Ind.....	22,273	13			1		16			1
El Paso, Tex.....	69,149	69		1	18	3	1			9
Elwood, Ind.....	111,028	7								1
Englewood, N. J.....	12,603	3	2		19		3		1	
Eugene, Oreg.....	14,357	4					1			
Eureka, Calif.....	15,142	2							2	
Evanston, Ill.....	29,304	16					3			
Everett, Mass.....	40,160	11	4		10		1			2
Everett, Wash.....	37,205				36		1		3	
Fairmont, W. Va.....	16,111		2		10		1			
Fall River, Mass.....	129,828	37	8	2	19		5		12	4
Fargo, N. Dak.....	17,872	7			18					
Findlay, Ohio.....	14,858	4			12		2		1	
Fond du Lac, Wis.....	21,486		3		8					
Fort Scott, Kans.....	10,564	4			9					1
Fort Smith, Ark.....	29,390				1					
Fort Wayne, Ind.....	78,014	24	3			1	12		2	
Fort Worth, Tex.....	103,597	23	1				3		5	2
Fostoria, Ohio.....	10,959	3								
Frammingham, Mass.....	14,149	3			10				2	
Fremont, Nebr.....	10,080	2								
Fremont, Ohio.....	11,034				14		1			3
Fresno, Calif.....	36,314	16		1			2	1		
Galesburg, Ill.....	24,629	7							1	1
Galveston, Tex.....	42,650	12								
Gardner, Mass.....	17,534	3			1				1	
Gary, Ind.....	56,000	14	2		4		2	1		2
Glens Falls, N. Y.....	17,160	6								1
Gloucester City, N. J.....	11,375				5				1	
Grand Rapids, Mich.....	132,861	45	2		281	2	3		11	3
Granite City, Ill.....	15,860	7			13					
Great Falls, Mont.....	13,948	6					1		1	
Greeley, Colo.....	11,942	6			4		1			
Green Bay, Wis.....	30,017		2		7					
Greenfield, Mass.....	12,251	6			8				1	
Greensboro, N. C.....	20,171	3								1
Greenwich, Conn.....	19,594	4			6					
Hackensack, N. J.....	17,412	7			2		39			1
Hammond, Ind.....	37,016	19	4	1	10		3			1
Harrison, N. J.....	17,345		1		22		1		1	
Hartford, Conn.....	112,831	50	10	2	50		7		4	4
Haverhill, Mass.....	49,180	18	6		97		1		8	2
Hibbing, Minn.....	17,559		5							
Hoboken, N. J.....	78,324	17	1		3		1		3	1
Holland, Mich.....	13,459				36		1			
Holyoke, Mass.....	66,503	21	1		12		2			3
Hoquiam, Wash.....	12,230				1					
Houston, Tex.....	116,878	52	3		4					4
Huntington, Ind.....	10,982	5	4	2	4		8			
Huntington, W. Va.....	47,686	16								1
Hutchinson, Kans.....	21,461				10				1	
Independence, Mo.....	11,964	4	2		1					

1 Population Apr. 15, 1910.

## DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Contd.

City Reports for Week Ended May 22, 1920—Continued.

City.	Popula- tion as of July 1, 1917 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Indianapolis, Ind.	23,622	89	4		499		17		8	5
Iowa City, Iowa	11,626				1		3			
Ironton, Ohio	16,079	7			12		1			
Ironwood, Mich.	15,065	5	2		3		1			1
Irvington, N. J.	16,710		2		12		5		1	
Ishpeming, Mich.	12,448						2			
Ithaca, N. Y.	16,017	3			1		1			
Jacksonville, Ill.	15,506	13			2					1
Jamestown, N. Y.	37,431	8	2		8	1	1		6	1
Janesville, Wis.	14,411				12	1	3			
Jefferson City, Mo.	13,712	5								1
Jersey City, N. J.	312,557		16		68		7		10	
Joplin, Mo.	33,400	1			8					
Kalamazoo, Mich.	50,408	32	1		164	1	4		2	
Kankakee, Ill.	14,270	2			1		3			
Kansas City, Kans.	102,096		2		44				11	
Kansas City, Mo.	305,816	77	8		28		7		9	8
Kearny, N. J.	24,325	5	1		30		4		1	
Keene, N. H.	10,725	2					2		9	
Kenosha, Wis.	32,833		1		7		11			
Knoxville, Tenn.	59,112		1	1	5	1	4		2	2
Kokomo, Ind.	21,929	7			10		1			
Lackawanna, N. Y.	16,219	2	2		1					
La Crosse, Wis.	31,833				44					
La Fayette, Ind.	21,481	9	1		13		5			
Lancaster, Ohio	16,086				1					
La Salle, Ill.	12,332		1		2				1	
Lawrence, Kans.	13,477	5			21					1
Lawrence, Mass.	102,923	20	4		24		6	1	4	1
Leavenworth, Kans.	19,363	3								
Leominster, Mass.	21,365	5								
Lexington, Ky.	41,997	18			6		1		1	5
Lima, Ohio	37,145	11	3		31		1			1
Lincoln, Nebr.	46,957	5	2		35		2			1
Little Rock, Ark.	58,716				1					
Lockport, N. Y.	20,028	3	1				1		5	
Logansport, Ind.	21,338	1			1		4			
Long Beach, Calif.	29,163	8	4		4		1			1
Long Branch, N. J.	15,733	5					2			
Lorain, Ohio	38,266				3		8			1
Los Angeles, Calif.	535,485	157	49	2	120		12		71	20
Louisville, Ky.	240,808	64	5		24		19		7	8
Lowell, Mass.	114,366	39	2		13		5		5	3
Ludington, Mich.	10,566	4			2					
Lynchburg, Va.	33,497	14			3				4	
Lynn, Mass.	104,534	22	6	2	3		10		2	1
Macon, Ga.	46,069				4				7	
Madison, Wis.	31,315				12		2			
Malden, Mass.	52,243	16	1	1	31					
Manchester, Conn.	15,859	1			6		3			
Manchester, N. H.	79,607	16	4		55		2			2
Manitowoc, Wis.	13,931				1		6			
Mankato, Minn.	10,365				1		2		1	
Marinette, Wis.	14,610				3					
Marion, Ind.	19,923	8			4		1			2
Marion, Ohio	24,129		1		17					
Marquette, Mich.	12,555	1			9					
Marshalltown, Iowa	14,519		1							
Martinsburg, W. Va.	12,984	1		1						
Mattoon, Ill.	12,764				3					
Medford, Mass.	26,681	6	2		16		2		3	
Melroe, Mass.	17,724	5			8				2	
Memphis, Tenn.	151,877	65	1		4		6		27	2
Meriden, Conn.	129,431		1		5				1	
Methuen, Mass.	14,320	3			11		1			
Middletown, Ohio	16,384	4			3		5		2	
Milwaukee, Wis.	445,098	112	18		712	1	20		25	
Minneapolis, Minn.	373,448	91	11	1	128	1	30	1	31	13
Mishawaka, Ind.	17,083	2			2					
Missoula, Mont.	19,075	5			11				1	1

<sup>1</sup> Population Apr. 15, 1910.



# DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS— Continued.

City Reports for Week Ended May 22, 1920—Continued.

City.	Popula- tion as of July 1, 1917 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Mobile, Ala.	59,201	21								5
Monmouth, Ill.	10,346	3								
Montgomery, Ala.	44,039	17					4		2	
Morgantown, W. Va.	14,444	2								
Morristown, N. J.	13,410	3			5					
Moundsville, W. Va.	11,515	4			4					
Mount Vernon, N. Y.	37,991	12	3		15	1			4	
Muncie, Ind.	25,653	7	1		3		3		3	
Muscatine, Iowa.	17,713	2			1					
Muskogee, Okla.	47,173		1		9					
Nashua, N. H.	27,541	18			49				8	
Nashville, Tenn.	118,136	37	4		12		7		2	4
New Bedford, Mass.	121,622	35	2		3		28		7	3
New Britain, Conn.	55,385	10	1		11	1	26	1	2	3
New Brunswick, N. J.	25,855		2						1	
Newburyport, Mass.	15,291	5	1		25					1
New Castle, Ind.	14,144	1								
New Haven, Conn.	152,275	46	5		12		8		8	2
New London, Conn.	21,199				21		1			
New Orleans, La.	377,010	114	6		9		3		27	19
Newport, R. I.	30,585	5			13		2			1
Newton, Mass.	44,343	5	1		119		5		4	
New York, N. Y.	5,757,492	1,324	283	17	970	15	176	3	275	119
Niagara Falls, N. Y.	38,466	17	2		31				1	1
Norfolk, Va.	91,148				28		1		3	4
North Adams, Mass.	22,019	9			17				2	1
Northampton, Mass.	20,006	12	1		14				1	3
North Attleboro, Mass.	11,248	2								
North Tonawanda, N. Y.	14,060	4	1							
Norwalk, Conn.	27,332	3			7		2			
Norwich, Conn.	21,923	4			1		1			
Norwood, Ohio.	23,269	6			1		2		1	
Oakland, Calif.	206,405	48	4	1	2		11	1	8	3
Oak Park, Ill.	27,816	6			10		12		1	
Oklahoma City, Okla.	97,588	22	1		6	1			3	
Olean, N. Y.	16,927	3								
Omaha, Nebr.	177,777	47	1		52		10			3
Orange, N. J.	33,636	10	1		11		2			1
Oshkosh, Wis.	36,549				6		1			
Paducah, Ky.	25,178						2			
Parkersburg, W. Va.	21,059	6	1		5					
Parsons, Kans.	15,952		3		2				1	
Pasadena, Calif.	49,620	10			29					
Passaic, N. J.	74,478	13	2		29	1			3	
Paterson, N. J.	140,512		4		190					
Pawtucket, R. I.	60,666	16								
Peekskill, N. Y.	19,034	3								
Petersburg, Va.	25,817	12			7		2		2	2
Philadelphia, Pa.	1,735,514	473	71	6	482	5	71		74	50
Phillipsburg, N. J.	15,879	6								
Piqua, Ohio.	14,275	5			3		1		1	
Pittsfield, Mass.	39,678	11			2		2		6	1
Plainfield, N. J.	24,330	2	3		36		1		3	
Plattsburg, N. Y.	13,111	3								
Plymouth, Mass.	14,001	4								
Pontiac, Mich.	18,006	7	2				1			
Port Chester, N. Y.	16,727	5	1							
Port Huron, Mich.	18,863	14					3		1	
Portland, Me.	64,720	29	1		5	2	5			
Portland, Oreg.	308,399	67	3		76		10	1	3	9
Portsmouth, N. H.	11,730				18					
Portsmouth, Ohio.	29,356	8			10	1				
Poughkeepsie, N. Y.	30,786	11			2				2	
Providence, R. I.	259,895	70	18	2	56	3	10	1		6
Pueblo, Colo.	56,084	18			19		1		1	1
Quincy, Ill.	36,832	9			1		1			1
Quincy, Mass.	39,022	10					1			
Racine, Wis.	47,465				28		7		1	
Rahway, N. J.	10,361	1			12		6			
Raleigh, N. C.	20,274	10			10		1			1

<sup>1</sup> Population April 15, 1910.

# DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS— Continued.

City Reports for Week Ended May 22, 1920—Continued.

City.	Popula- tion as of July 1, 1917 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Redlands, Calif.	14,573	1								
Reno, Nev.	15,514	5			5		2			1
Richmond, Ind.	25,080	6	1							
Richmond, Va.	158,702	59	2	1	141	1	5		1	7
Riverside, Calif.	20,466	8	3		2			1		4
Roanoke, Va.	46,282	7	2		1					
Rochester, N. Y.	264,714	79	13	1	52	1	18		10	7
Rock Island, Ill.	29,452	14			61		2		1	
Rocky Mount, N. C.	12,673	4					1			
Rome, Ga.	15,607		3		1					
Rome, N. Y.	24,259				12					
Rutland, Vt.	15,038	2			14		9		1	
Sacramento, Calif.	68,984	16	3		6	1				1
Saginaw, Mich.	56,469	13	1							
St. Cloud, Minn.	12,013		3		1					
St. Joseph, Mo.	86,498	35	4		10		3			4
St. Louis, Mo.	768,630	193	49	1	267	5	25		47	14
St. Paul, Minn.	252,465	68	13		101	3	16	3	2	7
Salem, Mass.	49,346	6	1		18		2			
Salem, Oreg.	21,274	4								1
Salt Lake City, Utah.	121,623	31	4		20		2		1	3
San Bernardino, Calif.	17,616	6								2
San Diego, Calif.	56,412	29			2		4		1	1
Sandusky, Ohio.	20,226	2	1		29		1			
Sanford, Me.	11,217	3								
San Francisco, Calif.	471,023	120	18	1	5		8		30	9
Santa Barbara, Calif.	15,360	6								
Santa Cruz, Calif.	15,150	2	1		3				1	1
Saratoga Springs, N. Y.	13,839	2								
Sault Ste. Marie, Mich.	14,130	5							3	
Savannah, Ga.	69,250	30					1		1	1
Schenectady, N. Y.	163,774	15	2		144				5	
Seattle, Wash.	366,445		6		91		8			
Sheboygan, Wis.	28,507		1		39		5			
Sioux City, Iowa.	58,568		1				3			
Sioux Falls, S. Dak.	16,887	5	1		6		4			
Somerville, Mass.	88,618	23			41		5		4	3
South Bend, Ind.	70,567	21	1		6				2	
Southbridge, Mass.	14,465	2							1	
Spokane, Wash.	157,656		6		53					
Springfield, Ill.	62,623	17	2		25		5			1
Springfield, Mass.	108,668	23	2		95	1	8		5	3
Springfield, Ohio.	52,296	19			53		6		1	
Stamford, Conn.	31,810		1		10		2		1	
Staunton, Va.	11,823	3					1			
Steubenville, Ohio.	28,259	8			13					
Stockton, Calif.	36,209	15	2		1		2			1
Superior, Wis.	47,167		1		1		2			
Syracuse, N. Y.	158,559	53	10		157	1	21		4	1
Tacoma, Wash.	117,446		3		42		1			
Taunton, Mass.	36,610	14			5		2		1	2
Terre Haute, Ind.	67,361	21	1		38	1	3	1	1	
Toledo, Ohio.	202,010	68	2	1	17		10	1	7	5
Topeka, Kans.	49,538	33	2		39				5	1
Traverse City, Mich.	14,090	2								
Trenton, N. J.	113,974	27	17	1	1		4		12	
Trinidad, Colo.	14,413		2							
Troy, N. Y.	78,094	17	3		1		1		5	2
Tucson, Ariz.	17,324	18								
Tuscaloosa, Ala.	10,824				1				1	
Union, N. J.	25,370		2		6					
Vallejo, Calif.	13,803	3								1
Vancouver, Wash.	13,805						1			
Virginia, Minn.	15,954				3					
Walla Walla, Wash.	26,067				1				1	
Waltham, Mass.	31,011	7	3	1	21					
Washington, D. C.	369,282	142	12	3	14		23		23	21
Waterbury, Conn.	89,201		4		8		17		4	1
Watertown, Mass.	15,188	7			4					
Watertown, N. Y.	30,404		1		1		1			1
Wausau, Wis.	19,666	7			8		17	3		
Westfield, Mass.	18,799	3			2					

## DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Contd.

City Reports for Week Ended May 22, 1920—Continued.

City.	Popula- tion as of July 1, 1917 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
West Hoboken, N. J.	44,386	4	3		13	1	1			
West New York, N. J.	19,613	4			4		1		1	
West Orange, N. J.	13,964	2			15				1	
Wheeling, W. Va.	43,657	18	1		46	1				1
White Plains, N. Y.	23,331	4			16		1			
Wichita, Kans.	75,597	26			12		4		4	3
Willimantic, Conn.	12,902	4		1	1		1			
Wilmington, Del.	95,369	34	3		23	2	6	3		2
Wilmington, N. C.	30,400	12								2
Winchester, Mass.	10,812	4			11		1			
Winona, Minn.	<sup>1</sup> 18,583						2		1	
Winston-Salem, N. C.	35,136	12			7		3		3	3
Winthrop, Mass.	13,105	1	1		25		6		1	
Woburn, Mass.	16,076	1								
Worcester, Mass.	166,106	42	5		3		29	2	7	6
Yakima, Wash.	22,058				28		4			
Yonkers, N. Y.	103,066	22	3		50		1			3
Zanesville, Ohio.	31,320	9			6		2	1	1	1

<sup>1</sup> Population April 15, 1910.

## FOREIGN AND INSULAR.

### CHINA.

#### Cerebrospinal Meningitis—Amoy—Shanghai.

Cerebrospinal meningitis was reported present and increasing at Amoy, China, April 9, 1920. At Shanghai there were notified six fatalities from cerebrospinal meningitis during the two weeks ended May 1, 1920.

### GREECE.

#### Plague—Canea, Island of Crete.

Under date of May 28, 1920, six cases of plague were reported at Canea, Island of Crete.

#### Typhus Fever—Summary, 1883-1919.

In Greece typhus fever was observed at Athens in the year 1883, with 50 reported cases. During the period 1890-1902 several cases were notified at the village of Kriekouki. In 1903 an outbreak of typhus occurred at Koropi, with 134 reported cases and 28 fatalities. The infection was stated to have been introduced by a foreign sailor. During the Greco-Turkish War (1912-13) typhus broke out at two foci, one being at Saloniki among Turkish refugees and one at Janina among Turkish prisoners, who had been successively transported to Zante, Patras, and Æghion. At Saloniki the total number of cases was stated at 60, mortality being 23 per cent; the epidemic was confined to Turkish refugees. At Zante, Patras, and Æghion the Turkish prisoners conveyed the infection to the inhabitants of the town, among whom a number of cases occurred. In August and in December, 1915, some isolated cases were notified at Kavala. In February and March, 1916, cases occurred at Corfu among soldiers of the Serbian Army who had taken refuge in that island. In the month of March, 1916, typhus made its appearance at Larissa and in neighboring towns and villages of Epirus, persisting up to about the end of July, at which time it disappeared. The number of reported cases was 84, of which 14 were fatal. In January, 1918, epidemic typhus broke out in the prisons of Janina, Province of Epirus, whence it was speedily communicated to the army, the rest of the town, and near-by towns and villages. The monthly report of cases observed in

<sup>1</sup> From report of Sanitary Inspector Dr. C. Kyriazidis, member of the sanitary council of Greece, published in *La Grèce Médicale*, April, 1920.

Epirus was: January, 220; February, 102; March, 83; April, 48; total, 453 cases, with 84 deaths, or a mortality of 18.5 per cent. The epidemic disappeared toward the end of April, 1918. About the same time typhus broke out in the island of Mitylene with a reported total of 776 cases and a mortality of 18 per cent.

After the expulsion of the Bulgars and the reoccupation of eastern Macedonia by the Greek Army, December, 1918, typhus fever, which had been endemic during the Bulgar occupation, increased in intensity, following the return of the inhabitants, who had been driven out. This epidemic lasted from December, 1918, to May, 1919, the number of reported cases being 1,328. The case occurrence according to months was: December, 1918, 46 cases; January, 1919, 175 cases; February, 556; March, 420 cases; April, 100 cases; May, 31 cases; total, 1,328 cases, with 198 deaths, or a mortality of 14.9 per cent.

#### JAPAN.

##### Cerebrospinal Meningitis—Taiwan Island.

During the period from April 11 to 30, 1920, 19 cases of cerebrospinal meningitis were notified in the island of Taiwan (Formosa), Japan.

#### MEXICO.

##### Plague—Vera Cruz.

Under date of May 31, 1920, eight cases of plague with four fatalities were reported at Vera Cruz, Mexico.

#### UNION OF SOUTH AFRICA.

##### Plague—Outbreak in Orange Free State.

An outbreak of plague occurring among natives on a farm near Bothaville, Hoopstad district, Orange Free State, was reported April 24, 1920. Eight cases with three fatalities were notified.

#### INFLUENZA.

The following information was taken from reports received during the week ended June 11, 1920:

Place.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Algiers.....	Apr. 1-30.....	6		Pneumonia and bronchitis, 57 deaths.
Australia:				
Adelaide.....	Apr. 11-17.....	4	1	
Canada:				
Manitoba—				
Winnipeg.....	May 2-15.....	2	2	
Ontario—				
Fort William and Port Arthur.	May 23-29.....	1	1	
Quebec—				
Quebec.....	May 16-22.....	1		At Grosse Isle quarantine station. From vessel.



## INFLUENZA—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Ceylon:				
Colombo.....	Mar. 28-Apr. 17.....		15	
China:				
Antung.....	Apr. 26-May 2.....	5		
Shanghai.....	Apr. 18-24.....	4		
Denmark:				
Copenhagen.....	Apr. 25-May 1.....	134	2	
France:				
Bordeaux.....	Apr. 26-May 9.....		3	
Cette.....	Apr. 1-30.....			Present.
Nice.....	Jan. 1-31.....		40	
Paris.....	Mar. 11-20.....		27	
Great Britain:				
England and Wales.....	May 2-8.....		201	In 96 great towns. Population, 16,577,344.
Do.....	May 9-15.....		216	Do.
London.....	May 2-8.....		31	Greater London and Outer Ring, 66 deaths.
Do.....	May 9-15.....		32	Greater London and Outer Ring, 79 deaths.
India:				
Madras.....	Apr. 18-24.....		5	
Japan:				
Nagoya.....	Apr. 26-May 1.....		13	
Malta.....	Mar. 1-31.....	364		Pneumonia, 16 cases; broncho-pneumonia, 37 cases.
New Zealand:				
Dunedin.....	Mar. 16-29.....	220		
Spain:				
Bilbao.....	Mar. 1-31.....		9	
Sweden:				
Gottenborg.....	May 4-10.....	74		
Malmo.....	Apr. 18-May 5.....	81		
Stockholm.....	Apr. 18-24.....	33	5	
Switzerland:				
Basel.....	Apr. 11-24.....	130	3	
Zurich.....	Apr. 11-May 1.....	9	1	
Straits Settlements:				
Singapore.....	Apr. 11-17.....		15	
Tunis:				
Tunis.....	Apr. 27-May 2.....		4	
Union of South Africa:				
Durban.....	Mar. 7-13.....		1	

## CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER.

Reports Received During Week Ended June 11, 1920.<sup>1</sup>

## CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
India:				
Bombay.....	Apr. 4-10.....	1	1	Mar. 7-27, 1920: Deaths, 4,324.
Madras.....	Apr. 4-24.....	4	2	
Japan:				
Taiwan Island.....	Apr. 21-30.....	23	13	Entire island.
Java:				
West Java.....				Mar. 26-Apr. 1, 1920: Cases, 1; deaths, 1.
Batavia.....	Mar. 26-Apr. 1.....	1		
Philippine Islands:				
Manila.....	Apr. 18-May 1.....	3	1	
Provinces.....				Apr. 18-May 1, 1920: Cases, 109; deaths, 96.
Albay.....	Apr. 18-24.....	1	1	
Cagayan.....	Apr. 25-May 1.....	108	95	
Siam:				
Bangkok.....	Mar. 21-Apr. 3.....	123	58	

<sup>1</sup> From medical officers of the Public Health Service, American consuls, and other sources.

# **CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.**

## **Reports Received During Week Ended June 11, 1920—Continued.**

### **PLAGUE.**

Place.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Bahia.....	Mar. 7-Apr. 17....	14	11	
Egypt.....				Jan. 1-Apr. 29, 1920: Cases, 195; deaths, 117.
Cities:				
Suez.....	Apr. 23-29.....	7	3	
Provinces:				
Assiout.....	Apr. 23-29.....	6	2	Septicemic.
Girgeh.....	Apr. 23-27.....	8		
Minieh.....	Apr. 23-26.....	1	1	
Greece:				
Island of Crete—				
Canea.....	May 28.....	6		
India.....				Mar. 28-Apr. 10, 1920: Cases, 9,479; deaths, 7,615.
Bombay.....	Mar. 21-Apr. 10....	38	25	
Karachi.....	Apr. 4-17.....	63	54	
Madras Presidency.....	Apr. 4-24.....	87	67	
Rangoon.....	Mar. 28-Apr. 3....	52	48	
Java:				
East Java.....				Feb. 29-Mar. 6, 1920: Cases, 9; deaths, 9. In district of Surabaya.
Mexico:				
Vera Cruz.....	May 31.....	8	4	
Siam:				
Bangkok.....	Mar. 21-Apr. 3....	7	7	
Straits Settlements:				
Singapore.....	Mar. 14-Apr. 17....	6	5	
Union of South Africa:				
Orange Free State—				
Hoopstad District.....	Apr. 24.....	8	3	Among natives on a farm.

### **SMALLPOX.**

Algeria:				
Algiers.....	Apr. 1-30.....	1		
Brazil:				
Bahia.....	Mar. 7-Apr. 17....	33	28	
Canada:				
Alberta—				
Calgary.....	May 16-22.....	3		
Manitoba—				
Winnipeg.....	May 2-8.....	1	1	
Nova Scotia—				
Sydney.....	May 16-24.....	1		
Ontario—				
Fort William and Port				
Arthur.....	May 16-29.....	15		
Kingston.....	May 2-22.....	5		
Saskatchewan—				
Moose Jaw.....	May 16-22.....	3		
Saskatoon.....	May 9-15.....	1		
China:				
Amoy.....	Mar. 21-Apr. 3....		7	
Canton.....	Apr. 1-30.....			Present.
Chungking.....	Apr. 4-24.....			Do.
Swatow.....				Reported in Wuhu district, May 1.
Colombia:				
Barranquilla.....	May 2-8.....		2	Epidemic.
Santa Marta.....	May 16-22.....			Becoming more general.
Egypt:				
Alexandria.....	Apr. 23-May 6....	47	18	
France:				
Brest.....	Apr. 24-30.....	1		
Paris.....	Mar. 11-20.....	1		
Great Britain:				
Glasgow.....	May 2-8.....	54	1	
India.....				Mar. 7-27, 1920: Deaths, 5,272.
Bombay.....	Mar. 21-Apr. 10....	138	57	
Karachi.....	Apr. 4-17.....	17	9	
Madras.....	Apr. 4-24.....	51	18	
Japan:				
Kobe.....	Apr. 5-25.....	10		
Taiwan.....	Apr. 11-30.....	17	5	

**CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.****Reports Received During Week Ended June 11, 1920—Continued.****SMALLPOX—Continued.**

Place.	Date	Cases.	Deaths.	Remarks.
Java:				
West Java.....				Mar. 26-Apr. 1, 1920: Cases, 23; deaths, 2.
Batavia.....	Mar. 26-Apr. 1....	1	1	
Malta.....	Mar. 1-31.....	1		
Portugal:				
Lisbon.....	Apr. 25-May 1....		6	
Russia:				
Riga.....	Apr. 1-15.....	6		
Siam:				
Bangkok.....	Mar. 21-27.....	1		
Spain:				
Barcelona.....	Apr. 9-May 6.....		10	
Valencia.....	May 2-8.....	7	2	
Tunis:				
Tunis.....	Apr. 27-May 2....	1		

**TYPHUS FEVER.**

Algeria:				
Algiers.....	Apr. 1-30.....	12	6	
Chile:				
Valparaiso.....	Apr. 11-24.....	8		
Danzig.....	May 2-8.....	1		
Egypt:				
Alexandria.....	Apr. 23-May 6....	113	31	
Great Britain:				
Belfast.....	May 2-8.....	2		
Dublin.....	do.....		1	
Tunis:				
Tunis.....	Apr. 27-May 2....	1	3	

**YELLOW FEVER.**

Brazil:				
Bahia.....	Apr. 11-17.....	1		

**Reports Received from Dec. 27, 1919, to June 4, 1920.****CHOLERA.**

Place.	Date.	Cases.	Deaths.	Remarks.
China:				
Amoy.....	Nov. 4-17.....		2	Aug. 15-Nov. 16, 1919: Cases: 15,192; deaths, 9,823.
Chosen (Korea)				
Chemulpo.....	Oct. 1-31.....	6	4	
Fusan.....	do.....	34	30	
Provinces—				
Keiki.....	Aug. 15-Nov. 16..	224	135	
Kogen.....	do.....	64	38	
Kokai.....	do.....	4,015	2,770	
North Heian.....	do.....	1	1	
North Kankyo.....	do.....	3,196	2,434	
North Keisho.....	do.....	497	275	
North Zenra.....	do.....	63	35	
South Chusel.....	do.....	1,326	692	
South Heian.....	do.....	930	590	
South Kankyo.....	do.....	3,031	1,838	
South Keisho.....	do.....	870	551	
South Zenra.....	do.....	318	156	
Greece:				
Saloniki.....	Oct. 10.....	1		

# **CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.**

**Reports Received from Dec. 27, 1919, to June 4, 1920—Continued.**

## **CHOLERA—Continued.**

Place.	Date.	Cases.	Deaths.	Remarks.
<b>India:</b>				
Bombay.....	Nov. 2-8.....	1	1	Oct. 19-Dec. 27, 1919: Deaths, 23,388. Jan. 4-Mar. 6, 1920: Deaths, 17,123.
Do.....	Jan. 11-Feb. 21.....	3	2	
Calcutta.....	Oct. 26-Dec. 27.....	181	166	
Do.....	Dec. 28-Apr. 3.....	481	370	
Madras.....	Nov. 23-Dec. 27.....	14	5	
Do.....	Dec. 28-Mar. 28.....	35	15	
Rangoon.....	Nov. 30-Dec. 27.....	12	9	
Do.....	Dec. 28-Mar. 27.....	12	10	
<b>Indo-China:</b>				
Saigon.....	Oct. 27-Nov. 23.....	5	4	
<b>Japan:</b>				
Kobe.....	Nov. 24-30.....	2		May 26, 1920: Present with threatened epidemic diffusion. For entire island: Oct. 22-Nov. 30, 1919: Cases, 651; deaths, 385.
Taiwan.....				
Tokyo.....	Nov. 10-20.....	1	1	
<b>Java:</b>				
East Java.....				Oct. 5-11, 1919: One case, 1 death. At Paseroean.
Surabaya.....	Feb. 8-14.....	1	1	
West Java.....				Nov. 5-Dec. 25, 1919: Cases, 17. Jan. 24-Mar. 18, 1920: Cases, 7; deaths, 2.
Batavia.....	Nov. 5-Dec. 25.....	17		
Do.....	Jan. 21-Feb. 12.....	2	1	
<b>Philippine Islands:</b>				
Manila.....	Nov. 2-Dec. 27.....	20	10	Nov. 2-Dec. 27, 1919: Cases, 1,574; deaths, 1,151.
<b>Provinces:</b>				
Albay.....	Nov. 2-Dec. 27.....	339	240	
Ambos Camarines.....	Nov. 2-Dec. 20.....	66	34	
Antique.....	Nov. 2-Dec. 27.....	160	113	
Batangas.....	do.....	39	28	
Bohol.....	do.....	34	27	
Cagayan.....	Nov. 3-15.....	35	20	
Capiz.....	Nov. 2-8.....	6	5	
Cavite.....	Nov. 2-Dec. 6.....	25	16	
Cebu.....	Nov. 2-Dec. 20.....	23	14	
Davao.....	Nov. 9-15.....	6	4	
Ilocos Norte.....	Nov. 2-29.....	42	40	
Ilocos Sur.....	Nov. 2-22.....	18	15	
Iloilo.....	Nov. 2-Dec. 20.....	55	33	
Isabela.....	Nov. 2-Dec. 13.....	167	77	
Laguna.....	Nov. 2-Dec. 20.....	23	17	
Mindoro.....	Nov. 2-Dec. 6.....	81	30	
Mountain.....	Nov. 2-Dec. 13.....	6	4	
Occidental Negros.....	Nov. 2-Dec. 27.....	100	53	
Pangasinan.....	Nov. 30-Dec. 20.....	60	46	
Rizal.....	do.....	41	15	
Sorsogon.....	Nov. 2-Dec. 13.....	208	139	
Tarlac.....	Nov. 2-22.....	11	11	
Tayabas.....	Nov. 2-Dec. 27.....	60	35	
Union.....	Nov. 9-15.....	5	5	
Manila.....	Feb. 3-28.....	2		Dec. 28, 1919-Apr. 10, 1920: Cases, 912; deaths, 506.
<b>Provinces:</b>				
Albay.....	Dec. 28-Apr. 10.....	78	53	
Ambos-Camarines.....	Dec. 28-Apr. 3.....	298	593	
Antique.....	do.....	219	60	
Batangas.....	Dec. 28-Feb. 14.....	19	12	
Cavite.....	Jan. 11-17.....	1	1	
Iloilo.....	Dec. 28-Jan. 3.....	9	2	
Ilocos Norte.....	Mar. 7-13.....		1	
Isabela.....	Jan. 11-17.....	6	3	
Laguna.....	Dec. 22-Jan. 3.....	2	2	
Mindoro.....	Jan. 4-24.....	24	11	
Mountain.....	Dec. 28-Jan. 10.....	11	6	
Occidental Negros.....	Jan. 4-Mar. 20.....	22	19	
Palawan.....	Jan. 11-Feb. 28.....	59	37	
Pangasinan.....	Dec. 28-Jan. 3.....	1		
Rizal.....	Feb. 1-7.....	3		
Samar.....	Jan. 4-Apr. 10.....	66	37	
Sorsogon.....	Jan. 1-24.....	51	40	
Tayabas.....	Jan. 4-Feb. 28.....	33	19	
<b>Poland:</b>				
Garwolin.....				Present in November, 1919.
Kowal.....				
Stryi.....				
<b>Russia:</b>				
Novorossisk.....	Nov. 8-11.....	3		
Odessa.....	Oct. 25-Nov. 7.....	93		
<b>Siam:</b>				
Bangkok.....	Dec. 7-27.....	163	57	Oct. 5-Dec. 15, 1919: Deaths, 1,080.
Do.....	Dec. 28-Mar. 20.....	270	131	

# **CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.**

**Reports Received from Dec. 27, 1919, to June 4, 1920—Continued.**

## **CHOLERA—Continued.**

Place.	Date.	Cases.	Deaths.	Remarks.
Straits Settlements:				
Singapore.....	Oct. 5-Dec. 27.....	15	14	
Do.....	Dec. 28-Mar. 13....	8	5	
Sumatra:				
Deli.....	Oct. 1-31.....	1	1	
Medan.....	Nov. 1-30.....	1	1	

## **PLAGUE.**

Argentina:				
Rosario.....	Dec. 1-31.....		7	
Do.....	Mar. 1-31.....		2	
Brazil:				
Bahia.....	Nov. 9-15.....	1	1	
Do.....	Jan. 25-Mar. 6.....	5	3	
Porto Alegre.....	Nov. 1-30.....		3	
Rio de Janeiro.....	Nov. 2-Dec. 27....	9	4	
Do.....	Jan. 11-17.....	1		
British East Africa:				
Kisumu.....	Sept. 28-Nov. 1....	6	6	Sept. 1-Dec. 31, 1919: Deaths, 33, reported by native inspectors; 601 reported by native chiefs.
Do.....	Feb. 1-7.....	1	1	Dec. 14-20, 1919: Present in vicinity. Feb. 15-21, 1920: Present in vicinity.
Mombasa.....	Feb. 1-21.....	14	14	
Nairobi.....	Mar. 21-27.....	2	2	
Ceylon:				
Colombo.....	Oct. 23-Dec. 27....	36	35	
Do.....	Dec. 28-Apr. 3....	48	24	
Chile:				
Antofagasta.....	Dec. 8-14.....	1		
Do.....	Feb. 8-14.....	1		
China:				
Hongkong.....	Dec. 7-13.....	1		
Do.....	Feb. 1-7.....	1	1	
Ecuador:				
Guayaquil.....	Nov. 1-31.....	2		
Do.....	Jan. 1-Apr. 13....	45	8	
Egypt:				
Cities—				
Alexandria.....	Dec. 3.....	1	1	Jan. 1-Dec. 25, 1919: Cases, 867; deaths, 469. Jan. 1-Apr. 21, 1920: Cases, 168; deaths, 106.
Do.....	Feb. 18.....	1	1	From vessel Rachid Pacha from Constantinople, Saloniki, and Smyrna.
Port Said.....	Feb. 13.....	1		
Suez.....	Feb. 1-Apr. 21....	15	11	
Provinces—				
Assiout.....	Nov. 15-21.....	30	17	
Do.....	Jan. 13-Apr. 21....	74	39	
Assouan.....	Mar. 31.....	1	1	
Fayoum.....	Mar. 2-Apr. 2.....	2	1	
Girgeh.....	Mar. 4-5.....	3	3	
Keneh.....	Mar. 26.....	1	1	
Minieh.....	Mar. 1-29.....	16	8	
Greece:				
Saloniki.....	Oct. 6-Dec. 21....	19	7	Present, Apr. 28.
Piræus.....	Apr. 25-May 20....	7		
Hawaii:				
Kaloha.....	Feb. 23-Mar. 23....	1	2	
India:				
Bombay.....	Oct. 19-Dec. 27....	6	6	Oct. 19-Dec. 27, 1919: Cases, 31,542; deaths, 23,443. Dec. 28, 1919-Mar. 20, 1920: Cases, 76,475; deaths, 70,320.
Do.....	Jan. 4-Mar. 20....	52	32	
Calcutta.....	Jan. 25-Mar. 20....	9	5	
Karachi.....	Nov. 9-29.....	3	2	
Do.....	Jan. 11-Apr. 3.....	40	24	
Madras Presidency.....	Nov. 9-Dec. 27....	1,068	704	
Do.....	Dec. 28-Mar. 28....	4,626	3,384	
Madras.....	Jan. 25-Feb. 14....	4	2	
Rangoon.....	Nov. 2-Dec. 27....	29	27	Oct. 19-Nov. 1, 1919: Cases, 10; deaths, 7.
Do.....	Dec. 28-Mar. 27....	542	512	
Indo-China:				
Saigon.....	Oct. 27-Dec. 7.....	11	9	
Do.....	Jan. 26-Feb. 7.....	1	1	
Java:				
East Java.....				
Surabaya.....	Jan. 1-Mar. 20....	70	68	Sept. 28-Dec. 31, 1919: Cases, 1,500; deaths, 1,499. Surabaya Residency, Jan. 1-Mar. 20, 1920: cases, 84; deaths, 83.



# **CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.**

**Reports Received from Dec. 27, 1919, to June 4, 1920—Continued.**

## **PLAGUE—Continued.**

Place.	Date.	Cases.	Deaths.	Remarks.
Mesopotamia:				
Bagdad.....	Jan. 3-9.....	1	1	
Peru:				
Callao.....	Nov. 1-30.....		3	
Paita.....	Dec. 29-Jan. 17.....	23	17	
Salaverry (Trujillo).....	Nov. 23-Dec. 21.....	9	1	Present in surrounding country and in vicinity.
Do.....	Dec. 29-Apr. 18.....	55	24	
Senegal:				
Dakar.....	Nov. 1-30.....		146	Including Dakar and vicinity.
Siam:				
Bangkok.....	Dec. 14-20.....	4	2	
Do.....	Feb. 1-Mar. 20.....	34	30	
Straits Settlements:				
Singapore.....	Oct. 26-Dec. 27.....	7	6	
Do.....	Jan. 4-Apr. 3.....	21	13	
Syria:				
Beirut.....	Dec. 22.....	29		
Turkey:				
Constantinople.....	Nov. 14-Dec. 20.....	11		Present Dec. 11, 1919. Nov. 14-20, 1919: Present in vicinity.
On vessel:				
S. S. Alps Maru.....	Feb. 28-Mar. 5.....	2	2	At port of London, England. Vessel left Yokohama, Japan, Dec. 3, 1919; arrived Suez Jan. 21, 1920. Destination, Hamburg.
S. S. Espana.....	Mar. 22.....			Reported at Las Palmas, Canary Islands; quarantined for plague which occurred on board en route. Vessel left Buenos Aires Feb. 16. Arrived at Malaga, Spain, Mar. 16. Destination, Mahon, Island of Minorca.
S. S. Kaisar-i-Hind.....	Nov. 28.....	3		At Port Said, Egypt. From Bombay, Nov. 15, for London.

## **SMALLPOX.**

Algeria:				
Department—				
Algiers.....	Nov. 11-Dec. 31.....	65		City of Algiers: Cases, 2.
Do.....	Jan. 1-Apr. 20.....	115		
Constantine.....	Nov. 11-Dec. 31.....	15		
Do.....	Jan. 1-Apr. 20.....	51		
Oran.....	Nov. 11-Dec. 31.....	90		
Do.....	Jan. 1-Apr. 20.....	211		
South Territories.....	do.....	12		
Arabia:				
Aden.....	Dec. 24-30.....	1	1	
Do.....	Jan. 6-20.....		3	
Argentina:				
Rosario.....	Jan. 1-31.....		1	
Austria:				
Vienna.....	Nov. 23-Jan. 3.....	10		Nov. 23, 1919-Jan. 3, 1920: Cases, 13.
Belgium:				
Brussels.....	Dec. 28-Mar. 6.....		5	
Bolivia:				
La Paz.....	June 29-Dec. 27.....		216	Dec. 29, 1918-June 28, 1919: Cases, 86; deaths, 44. Dec. 14-20, 1919: Cases, 7; deaths, 5.
Do.....	Dec. 28-Apr. 17.....		80	
Brazil:				
Bahia.....	Oct. 26-Nov. 22.....	1,704	1,022	
Do.....	Dec. 28-Mar. 6.....	546	392	
Ceara.....	Mar. 21-27.....		1	
Para.....	Feb. 8-Apr. 17.....		8	
Pernambuco.....	Nov. 10-Dec. 28.....	123	9	
Do.....	Dec. 28-Mar. 28.....	278	17	
Rio de Janeiro.....	Sept. 28-Dec. 27.....	429	119	
Do.....	Dec. 28-Apr. 10.....	42	34	
Santos.....	Nov. 24-30.....		1	
Do.....	Jan. 5-18.....		2	
Sao Paulo.....	Feb. 23-29.....		1	
British East Africa.....				Sept. 1-Dec. 31, 1919: Cases, 851; deaths, 327.
Zanzibar.....	Feb. 1-29.....	3	1	From s. s. Karapara from Bombay and s. s. Roma from Suez.
Bulgaria:				
Sofia.....	Feb. 22-Mar. 20.....	5		

# **CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.**

**Reports Received from Dec. 27, 1919, to June 4, 1920—Continued.**

## **SMALLPOX—Continued.**

Place.	Date.	Cases.	Deaths.	Remarks.
<b>Canada:</b>				
Alberta—				
Calgary.....	Apr. 4-May 10.....	8		
British Columbia—				
Vancouver.....	Nov. 30-Dec. 6.....	1		
Do.....	Jan. 4-17.....	1		
Victoria.....	May 9-15.....	3		
Manitoba—				
Winnipeg.....	Jan. 11-Apr. 17.....	13		
New Brunswick—				
Gloucester County.....				Jan.-Mar., 1920: Cases, 14. May
St. John.....	Jan. 29-May 1.....	10		15: Outbreak reported at Ship-
Nova Scotia—				pigan Island.
Halifax.....	Dec. 21-27.....	2		
Do.....	Jan. 4-Feb. 14.....	4		
Sydney.....	Dec. 7-13.....	1		
Do.....	Dec. 28-May 1.....	26		
Counties—				
Cumberland.....	Dec. 14-20.....			Present.
Gloucester.....				Oct.-Nov., 1919: Cases, 3.
Inverness.....	Dec. 14-20.....			Present.
Pictou.....	do.....			Do.
Ontario.....				Nov. 1-29, 1919: Cases, 1,673.
Fernie.....	Apr. 11-May 1.....	4		Nov. 30-Dec. 6, 1919: Cases,
Port William and Port	Jan. 25-Apr. 24.....	8		125, in 45 localities, exclusive of
Arthur.....				Dysart and Toronto. Dec. 1-
Hamilton.....	Dec. 14-20.....	3		31, 1919: Cases, 1,414; deaths, 2.
Do.....	Jan. 4-May 8.....	36		Dec. 28, 1919-Mar. 27, 1920:
Kingston.....	Dec. 21-27.....	1		Cases, 2,330; deaths, 35.
Do.....	Dec. 28-May 1.....	21		
Moncton.....	Apr. 25-May 1.....	1		
North Bay.....	Jan. 11-May 1.....	10		
Ottawa.....	Dec. 14-20.....	1		
Do.....	Dec. 28-May 22.....	55	1	
Peterborough.....	Dec. 21-27.....	3		
Do.....	Dec. 28-Apr. 10.....	57	2	
Prescott.....	Jan. 4-10.....	1		
Sault Ste. Marie.....	Dec. 7-27.....	1		
Do.....	Dec. 28-Jan. 3.....	1		
Toronto.....	Dec. 7-27.....	727		
Do.....	Dec. 28-May 22.....	895	7	
Windsor.....	Dec. 14-27.....	2		
Do.....	Mar. 21-May 1.....	3		
Prince Edward Island—				
Summerside.....	Feb. 14-May 7.....	4		
Quebec—				
Bonaventure and Gaspe	Jan. 1-Apr. 30.....	46		Counties.
Montreal.....	Dec. 7-27.....	3		
Do.....	Jan. 18-May 1.....	50		
Quebec.....	Dec. 7-27.....	4		
Do.....	Jan. 4-Apr. 24.....	20		
Saskatchewan—				
Moose Jaw.....	Dec. 28-May 8.....	8		
Saskatoon.....	Dec. 14-20.....	1		
Do.....	Mar. 28-May 8.....	2		From Toronto.
Regina.....	Mar. 27-Apr. 24.....	2		
Ceylon:				
Colombo.....	Nov. 16-Dec. 13.....	10	9	
Do.....	Dec. 28-Apr. 3.....	11	3	
China:				
Amoy.....	Nov. 4-Dec. 22.....			Present. Dec. 22: Four deaths.
Do.....	Dec. 30-Apr. 20.....	12	7	
Canton.....	Nov. 2-Dec. 27.....			Present.
Do.....	Dec. 28-Feb. 28.....			Do.
Chungsha.....	Jan. 4-10.....	55		
Chungking.....	do.....			Do.
Do.....	Dec. 28-Apr. 3.....			Do.
Foochow.....	Nov. 16-Dec. 27.....			Do.
Do.....	Feb. 28-Apr. 10.....			Do.
Hankow.....	Feb. 29-Apr. 17.....	2	1	
Hongkong.....	Jan. 25-Mar. 20.....	12		
Nankin.....	Dec. 6-27.....			Do.
Do.....	Dec. 28-Apr. 17.....			Do.
Shanghai.....	Dec. 22-28.....	2		
Do.....	Mar. 29-Apr. 4.....	1		
Tientsin.....	Feb. 1-7.....	1		

# **CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.**

**Reports Received from Dec. 27, 1919, to June 4, 1920—Continued.**

## **SMALLPOX—Continued.**

Place.	Date.	Cases.	Deaths.	Remarks.
<b>Chosen (Korea):</b>				
Chemulpo.....	Dec. 1-31.....	1	1	
Do.....	Jan. 1-Feb. 29.....	10	3	
Fusan.....	Oct. 1-Dec. 31.....	12	1	
Do.....	Feb. 1-29.....	1		
Seoul.....	Oct. 1-Dec. 31.....	19	4	
Do.....	Jan. 1-Feb. 29.....	162	44	
<b>Colombia:</b>				
Barranquilla.....	Nov. 16-Dec. 20.....	50	2	
Do.....	Jan. 11-May 1.....		7	Stated to be epidemic, Jan. 18-24, and Apr. 11-17, 1920. About 200 cases, Feb. 1-14.
<b>Costa Rica:</b>				
Limon.....	Mar. 28-Apr. 3.....		1	
<b>Cuba:</b>				
Habana.....	Jan. 31.....	4		Children living in same house.
<b>Czecho-Slovakia.</b>				
Prague.....	Feb. 8-Mar. 20.....	4	2	Apr. 29, 1920: Prevalent. In northern Bohemia, estimated number of cases, 6,000. In Greater Prague, estimated number cases, from 300 to 400.
Danzig.....				Apr. 18-24, 1920: In Danzig district, 2 cases.
<b>Egypt:</b>				
Alexandria.....	Nov. 12-Dec. 16.....	32	22	
Do.....	Jan. 1-Apr. 27.....	204	148	
Cairo.....	Oct. 1-Dec. 23.....	64	31	
Do.....	Jan. 1-Mar. 3.....	59	15	
Port Said.....	Oct. 1-Dec. 23.....	13	6	
Do.....	Jan. 1-Mar. 3.....	35	11	
<b>Finland:</b>				
Provinces.....				July 16-Dec. 31, 1919: Cases, 83; Jan. 15-31, 1920: Cases, 14.
Abo Och Berneborg.....	Nov. 1-15.....	1		
Nyland.....	July 16-Dec. 15.....	29		
St. Michael.....	Dec. 1-15.....	7		
Tavastehus.....	July 16-Dec. 31.....	15		
Do.....	Jan. 15-31.....	6		
Vasa.....	Dec. 1-31.....	4		
Do.....	Jan. 25-31.....	8		
Viborg.....	July 16-Dec. 31.....	37		
<b>France:</b>				
Paris.....	Jan. 1-31.....	3	2	
<b>Germany:</b>				
Prussia.....	Oct. 20-Nov. 20.....	1,100	323	Oct. 5-15, 1919: Cases, 32. In addition to previously reported cases: Sept. 28-Dec. 6, 1919. Cases, 175 (exclusive of Prussia). Dec. 7, 1919-Jan. 17, 1920; Cases, 217.
<b>Great Britain:</b>				
Birmingham.....	Mar. 28-Apr. 24.....	15		
Glasgow.....	Feb. 29-May 1.....	42	6	
Liverpool.....	Mar. 14-May 1.....	5	1	
London.....	Feb. 22-May 1.....	16		
<b>Greece:</b>				
Patras.....	Dec. 29-Mar. 14.....		5	
Saloniki.....	Nov. 10-Dec. 28.....	26	26	
Do.....	Dec. 9-Mar. 21.....	52	43	In vicinity: Drama, cases, 2; Zagoritzani, 9 cases, 1 death; Serres, 1 case.
<b>Haiti:</b>				
Port au Prince.....	Apr. 10-May 8.....			Present.
<b>Hungary:</b>				
India.....				Nov. 3-Dec. 7 1919: Cases, 15. Oct. 19-Dec. 27, 1919: Deaths, 3,421. Jan. 4-Mar. 6, 1920; Deaths, 12,882.
Bombay.....	Oct. 12-Dec. 20.....	46	11	
Do.....	Dec. 28-Mar. 20.....	284	114	
Calcutta.....	Oct. 26-Dec. 27.....	186	260	
Do.....	Dec. 28-Apr. 3.....	2,155	1,847	
Karachi.....	Dec. 21-27.....	6	2	
Do.....	Jan. 18-Apr. 3.....	122	39	
Madras.....	Nov. 2-Dec. 27.....	31	13	
Do.....	Dec. 28-Mar. 28.....	103	26	
Rangoon.....	Oct. 19-Dec. 27.....	51	18	
Do.....	Dec. 28-Mar. 27.....	247	61	
<b>Indo-China:</b>				
Saigon.....	Oct. 27-Nov. 23.....	2		
Do.....	Jan. 19-25.....	2		
<b>Italy:</b>				
Genoa.....	Jan. 5-Mar. 7.....	26		Province: Nov. 17-Dec. 28, 1919: Cases, 15; deaths, 3. Jan. 12-Apr. 4, 1920: Cases, 24.
Leghorn.....	Jan. 4-Mar. 15.....	8		

# **CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.**

**Reports Received from Dec. 27, 1919, to June 4, 1920—Continued.**

## **SMALLPOX—Continued.**

Place.	Date.	Cases.	Deaths.	Remarks.	
Italy—Continued.					
Messina.....	Nov. 10-Dec. 28.....	55	8	Province of Messina: Dec. 14-28, 1919: Cases, 68. Jan. 5-Apr. 4, 1920: Cases, 179; 2 deaths.	
Do.....	Dec. 29-Apr. 24.....	42	8		
Milan.....	Oct. 1-Dec. 31.....	15	2		
Do.....	Jan. 1-Feb. 29.....	28	8		
Naples.....	Dec. 28-May 2.....	16	17		
Palermo.....	Dec. 27-Mar. 30.....	6	5		
San Fratello.....	Dec. 1-28.....	49	5		
Do.....	Dec. 29-Mar. 7.....	29	1		
Trieste.....	Jan. 3-May 1.....	4	1		
Turin.....	Dec. 28-Feb. 15.....	6	.....		
Japan:					
Kobe.....	Dec. 15-21.....	1	.....	Entire island. Do.	
Do.....	Feb. 23-Apr. 4.....	6	.....		
Nagasaki.....	Feb. 2-8.....	1	1		
Nagoya.....	Apr. 11-17.....	1	.....		
Taiwan.....	Nov. 1-31.....	36	7		
Do.....	Jan. 1-Apr. 10.....	573	182		
Tokyo.....	Mar. 15-31.....	20	.....		
Yokohama.....	Feb. 1-Mar. 26.....	32	8		
Java:					
East Java.....	.....	.....	.....	Sept. 28-Dec. 18, 1919: Cases, 34. Jan. 1-Feb. 14, 1920: Cases, 2.	
Residency.....	.....	.....	.....		
Surabaya.....	Oct. 25-Dec. 18.....	26	.....	Oct. 17-Dec. 25, 1919: Cases, 659; death, 151. Jan. 2-Mar. 25, 1920: Cases, 519; deaths, 102.	
Do.....	Jan. 1-Mar. 20.....	2	.....		
West Java.....	.....	.....	.....		
Batavia.....	Oct. 17-Dec. 12.....	49	22		
Do.....	Jan. 2-Mar. 28.....	22	13	Present.	
Luxemburg.....	Feb. 15-Apr. 11.....	9	.....		
Malta.....	Feb. 1-Mar. 31.....	8	2		
Manchuria:					
Dairen.....	Feb. 3-Apr. 19.....	7	1		
Mukden.....	Jan. 18-Mar. 13.....	.....	.....		
Mesopotamia:					
Bagdad.....	Jan. 10-30.....	5	.....		
Mexico:					
Acapulco.....	Nov. 9-15.....	2	.....	Dec. 13-26, 1919, at outports, 6 cases. Present at 8 other localities. Outports, Dec. 27, 1919-Mar. 12, 1920: Cases, 25. Present at other localities. Mar. 25-Apr. 30: Present at outports.	
Chihuahua.....	Dec. 21-27.....	3	3		
Do.....	Jan. 11-Mar. 20.....	.....	3		
Ciudad Juarez.....	Jan. 11-Feb. 7.....	.....	2		
Guanajuato.....	Dec. 1-31.....	1	.....		
Do.....	Jan. 1-31.....	1	.....		
Mexico City.....	Nov. 16-Dec. 20.....	11	.....		
Do.....	Feb. 15-28.....	2	.....		
Salina Cruz.....	Feb. 1-29.....	18	.....		
San Luis Potosi.....	Dec. 14-20.....	.....	1		
Do.....	Jan. 18-May 8.....	4	9		
Tehuantepec.....	Dec. 25-31.....	6	.....		
Do.....	Jan. 1-Feb. 27.....	73	.....		
Vera Cruz.....	Apr. 12-18.....	1	.....		
Newfoundland:					
St. Johns.....	Dec. 20-26.....	3	.....		
Do.....	Dec. 27-May 21.....	18	.....		
Panama:					
Colon.....	Dec. 15-21.....	1	.....		
Peru:					
Callao-Lima.....	Feb. 1-29.....	4	.....		
Philippine Islands:					
Manila.....	Feb. 15-Mar. 13.....	3	3		
Portugal:					
Lisbon.....	Nov. 30-Dec. 27.....	.....	55	Present in interior, in 5 districts, Nov. 9-Dec. 20, 1919, with 56 reported cases. In interior, Dec. 28, 1919-Mar. 27, 1920. Present.	
Do.....	Dec. 28-Apr. 17.....	.....	133		
Oporto.....	Dec. 7-20.....	5	5		
Do.....	Dec. 28-Mar. 1.....	4	3		
Portuguese East Africa:					
Toams—	.....	.....	.....		
Chai-Chai.....	Feb. 1-7.....	1	.....		
Chinde.....	Dec. 28-Jan. 25.....	21	.....		
Inhambane.....	Dec. 7-27.....	7	.....		
Do.....	Jan. 4-Feb. 28.....	11	.....		
Lourenco Marques.....	Nov. 23-Dec. 20.....	9	.....		
Do.....	Feb. 15-Mar. 6.....	8	.....		
Mozambique.....	Dec. 7-27.....	2	.....		

# **CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.**

**Reports Received from Dec. 27, 1919, to June 4, 1920—Continued.**

## **SMALLPOX—Continued.**

Place.	Date.	Cases.	Deaths.	Remarks.
Portuguese East Africa—Contd.				
Towns—Continued.				
Quelimane.....	do.....	4		
Do.....	Jan. 4-Feb. 28.....	12		
Tete.....	Dec. 7-27.....	1		
Roumania:				
Bucharest.....	Jan. 1-31.....	1		
Russia:				
Riga.....	Feb. 16-Mar. 31.....	28		
Siberia:				
Vladivostok.....	Dec. 19-31.....	17	3	Aug. 1-Dec. 15, 1919: Cases, 10;
Do.....	Jan. 1-31.....	8	8	deaths, 3.
Spain:				
Barcelona.....	Nov. 6-Dec. 27.....	26		
Do.....	Dec. 8-Apr. 8.....		47	
Bilbao.....	Nov. 1-Dec. 20.....		4	
Do.....	Feb. 10-20.....	1		
Cadiz.....	Oct. 1-Nov. 30.....		6	
Gijon.....				Jan.-Mar., 1920: Cases, 67; deaths,
Madrid.....	Feb. 1-29.....		9	10.
Valencia.....	Nov. 10-Dec. 27.....	39	9	
Do.....	Dec. 28-May 1.....	165	27	
Vigo.....	Nov. 18-Dec. 27.....	14		
Do.....	Dec. 28-Apr. 25.....	2	7	Jan. 11-17, 1920: Present in vi-
				cinity.
Straits Settlements:				
Singapore.....	Mar. 7-13.....	1	1	
Sumatra:				
Melan.....	Oct. 1-31.....	8		
Tunis:				
Tunis.....	Dec. 23-29.....	1		
Do.....	Jan. 19-May 9.....	19	10	
Turkey:				
Constantinople.....	Nov. 9-Dec. 14.....	27		
Do.....	Feb. 18-Mar. 27.....	6	3	
Union of South Africa:				
Cape Town.....	Jan. 31-Feb. 27.....	1		
Johannesburg.....	Oct. 1-Dec. 31.....	21		
Do.....	Jan. 1-Feb. 28.....	7		
On vessel:				
S. S. Roggeveen.....		1		Vessel from Java: At Noumea,
				New Caledonia. Case left at
				Noumea. Vessel arrived at
				Sydney, Jan. 2, 1920.
S. S. Sarcozie.....	Dec. 23.....	1		At Ponta Delgada, Azores, from
				Rotterdam for New York.
S. S. Vestnorge.....	Jan. 15.....	1		Mild. At Kingston, Jamaica,
				from Philadelphia, via Nor-
				folk.
S. S. Karapara.....	Feb. 1-29.....	1		At Zanzibar, from Bombay.
S. S. Roma.....	do.....	2		At Zanzibar, from Suez.

## **TYPHUS FEVER.**

Algeria:				
Departments—				
Algiers.....	Dec. 11-31.....	2		Algiers (city), Jan. 1-31, 1920:
Do.....	Jan. 11-Apr. 20.....	19		Cases, 1; deaths, 1.
Constantine.....	Nov. 11-Dec. 31.....	2		
Do.....	Jan. 1-Apr. 20.....	35		
Oran.....	Nov. 21-Dec. 11.....	5		
Do.....	Jan. 21-Apr. 20.....	256		
South Territories.....	Mar. 21-31.....	43		
Austria.....				Sept. 7, 1919-Jan. 3, 1920: Cases:
Vienna.....	Sept. 7-Jan. 3.....	28		59.
Belgium:				
Ghent.....	Jan. 25-31.....		2	
Bolivia:				
La Paz.....	June 29-Dec. 20.....	30	31	Dec. 29, 1918-June 28, 1919:
Do.....	Jan. 4-Apr. 27.....	33	24	Deaths, 52.

# **CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.**

**Reports Received from Dec. 27, 1919, to June 4, 1920—Continued.**

## **TYPHUS FEVER—Continued.**

Place.	Date.	Cases.	Deaths.	Remarks.
<b>Brazil:</b>				
Ceara.....	Jan. 4-10.....	1		
Porto Alegre.....	Feb. 1-7.....		1	
<b>Bulgaria:</b>				
Sofia.....	Dec. 21-31.....	2	1	
Do.....	Jan. 1-Apr. 3.....	27	1	
Varna.....	Feb. 2-8.....	110		To Feb. 21: Present.
Vratsa.....	Jan. 25-31.....			Present. Also in vicinity.
<b>Canada:</b>				
Ontario Province.....				Dec. 1-31, 1919: One case.
<b>Chile:</b>				
Antofagasta.....	Nov. 17-Dec. 14.....	14		
Santiago.....				Jan. 12-Sept. 30, 1919: Cases, 5,153; deaths, 1,023. Outbreak in October, 1918.
Valparaiso.....	Nov. 9-Dec. 27.....	955	114	Dec. 1-13, 1919: Cases, 700 deaths, 18.
Do.....	Dec. 28-Apr. 10.....	235	108	
<b>China:</b>				
Antung.....	Nov. 3-Dec. 14.....	2		
Tientsin.....	Feb. 1-7.....	1		
<b>Czecho-Slovakia:</b>				
Prague.....	Dec. 21-27.....	1		
Do.....	Jan. 25-Feb. 7.....	2	1	
<b>Danzig:</b>				
Do.....	Apr. 4-10.....	1		
<b>Egypt:</b>				
Alexandria.....	Nov. 12-Dec. 16.....	6	1	
Do.....	Jan. 1-Apr. 22.....	274	67	
Cairo.....	Oct. 1-Dec. 23.....	113	46	
Do.....	Jan. 1-Mar. 4.....	89	67	
Port Said.....	Oct. 1-Dec. 16.....	3	1	
Do.....	Jan. 15-28.....	1	1	
<b>Finland:</b>				
Province—				
Viborg.....	July 16-31.....	2		
<b>Germany:</b>				
Great Britain:				Oct. 5-Dec. 6, 1919: Cases, 10—
Belfast.....	Dec. 28-Jan. 3.....	1	1	Civil population, 3; military, 4;
Dublin.....	Apr. 25-May 1.....	5		repatriated soldiers, 3. Dec. 7,
Glasgow.....	Nov. 30-Dec. 6.....	2		1919-Jan. 17, 1920: Cases, 73, of
<b>Greece:</b>				which 28 in civil population,
Cavalla.....	Nov. 17-Dec. 28.....	4		including 10 Polish workmen;
Drama.....	Nov. 24-Dec. 28.....	6		45 among German troops.
Saloniki.....	Oct. 6-Dec. 31.....		43	
Do.....	Dec. 28-Mar. 28.....	116	10	In vicinity, at Cavalla, 1 case;
Thasos Island.....	Dec. 22-28.....	1		Prani, 1; Vericep, 6 cases;
Zithna.....	do.....	1		Zagoritzani, 3.
<b>Hungary:</b>				Aug. 25-Dec. 7, 1919: Cases, 36.
Budapest.....	Nov. 3-Dec. 7.....	18		
<b>Italy:</b>				
Brindisi.....	Dec. 22-28.....	1		
Naples.....	Jan. 19-25.....	2	1	
Trieste.....	Dec. 14-27.....	3		
Do.....	Dec. 28-May 1.....	13	2	
Venice.....	Nov. 17-Dec. 21.....	6	1	
<b>Japan:</b>				
Nagasaki.....	Dec. 1-28.....	4	2	
Do.....	Jan. 12-Mar. 28.....	6	1	
<b>Mexico:</b>				
Chihuahua.....	Dec. 21-27.....	2		
Do.....	Jan. 11-May 9.....	1	1	
Mexico City.....	Nov. 16-Dec. 27.....	129		
Do.....	Dec. 28-Feb. 28.....	188		
Saltillo.....	Nov. 1-30.....	2	1	
Do.....	Mar. 28-Apr. 3.....	1		
San Luis Potosi.....	Dec. 14-27.....			Present.
Do.....	Dec. 28-May 8.....			Present. Mar. 29-Apr. 4, 1920: 1 death.
<b>Paraguay:</b>				
Asuncien.....	Nov. 30-Dec. 6.....	1		
<b>Peru:</b>				
Callao.....	Nov. 1-30.....		1	Callao-Lima: Jan. 1-Feb. 29,
Cerro de Pasco.....	Dec. 7-13.....	1		1920: Cases, 2.
<b>Poland:</b>				
Galicja (Province).....	Nov. 1-30.....	5,716	616	Nov. 1-30, 1919: Cases, 11,264; deaths 942. Including Province of Posen.



# **CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.**

**Reports Received from Dec. 27, 1919, to June 4, 1920—Continued.**

## **TYPHUS FEVER—Continued.**

Place.	Date.	Cases.	Deaths.	Remarks.
Poland—Continued.				
Warsaw.....	do.....	107	19	Oct 1-31, 1919: Cases, 129; deaths, 12.
Portugal:				
Lisbon.....	Dec. 6-12.....		2	
Operio.....	Dec. 21-27.....	1		
Roumania:				
Braïla.....	Jan. 1-31.....	18	3	
Bucharest.....	do.....	59	7	
Constantza.....	do.....	59	7	
Galatz.....	do.....	10	3	
Russia.....				Mar. 4, 1920: Reported present in nearly all Black Sea ports.
Esthonia.....				Feb. 16, 1920: Cases, 7,500 to 8,000. Estimated mortality, 40 per cent.
Narva.....	Feb. 16.....	2,500		
Reval.....	do.....	2,500		
Siberia:				
Vladivostok.....	Dec. 25-31.....	23	13	
Do.....	Jan. 1-31.....	279	22	Aug. 1-Dec. 15, 1919: Cases, 402; deaths, 42.
Spain:				
Barcelona.....	Nov. 20-26.....	7		
Bilbao.....	Dec. 22-31.....		1	
Corunna.....	Nov. 24-Dec. 7.....	2		
Madrid.....	Feb. 1-Mar. 31.....		2	
Tunis:				
Tunis.....	Dec. 14-20.....	1		
Do.....	Dec. 29-May 9.....	24	3	
Turkey:				
Constantinople.....	Nov. 14-Dec. 27.....	49		
Do.....	Feb. 8-Mar. 27.....	122	7	Increase reported due to influx of Russian refugees.
Princes Islands.....	do.....	50		About 15 miles distant from Constantinople. In Sea of Marmora.
Samsoun.....	Feb.-Mar.....	15		
Union of South Africa:				
Cape Province.....				Mar. 9, 1920: Present in 20 districts.
Districts—				Present.
Mount Frere.....	Feb. 22-28.....			Do.
Transkei.....	do.....			Mar. 9, 1920: Present in 5 districts.
Natal.....				
Districts—				Present.
Camperdown.....	Feb. 22-28.....			Do.
Ixopo.....	do.....			Do.
Newcastle.....	do.....			Do.
Vryheid.....	do.....			Do.
Transvaal—				
Johannesburg.....	do.....	1		Present in mining districts.
On vessels:				
S. S. Panama.....	Jan. 1-31.....	37		At Malta. Troops from Russia landed for treatment and segregated.

## **YELLOW FEVER.**

Brazil:				
Bahia.....	Oct. 26-Nov. 8.....	1	2	
Do.....	Feb. 29-Mar. 6.....	1	1	
Mexico:				
Campeche.....	Dec. 20.....	1		
Merida.....	Dec. 7-27.....	4	2	
Do.....	Dec. 28-Mar. 20.....	2		The cases were sent from Opiquen, vicinity of Muna. One death in case from Muna. Total to Dec. 27: Cases, 47; deaths, 21.
Salvador:				
Sonsomate.....	May 26.....		1	